

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549

FORM 20-F

REGISTRATION STATEMENT PURSUANT TO SECTION 12(b) OR 12(g) OF THE SECURITIES EXCHANGE ACT OF 1934

OR

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the fiscal year ended December 31, 2018

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

For the transition period from _____ to _____

OR

SHELL COMPANY REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934

Date of event requiring this shell company report _____

Commission File Number: 000-29442



FORMULA SYSTEMS (1985) LTD.
(Exact Name of Registrant as Specified in Its Charter
and translation of Registrant's name into English)

Israel
(Jurisdiction of Incorporation or Organization)

5 Haplada Street, Or Yehuda 60218, Israel
(Address of Principal Executive Offices)

Asaf Berenstin; 5 Haplada Street, Or Yehuda 60218, Israel
Tel: 972 3 5389487, Fax: 972 3 5389645
(Name, Telephone, E-mail and/or Facsimile Number and Address of Company Contact Person)

Securities registered or to be registered pursuant to Section 12(b) of the Act:

Title of Each Class	Trading Symbol(s)	Name of Each Exchange On Which Registered
American Depositary Shares, each representing one Ordinary Share, NIS 1 par value	FORTY	NASDAQ Global Select Market

Securities registered or to be registered pursuant to Section 12(g) of the Act: **None**

Securities for which there is a reporting obligation pursuant to Section 15(d) of the Act: **None**

Indicate the number of outstanding shares of each of the issuer's classes of capital or common stock as of the close of the period covered by the annual report:

As of December 31, 2018, the registrant had 14,750,338 outstanding ordinary shares, NIS 1 par value, of which 154,187 were represented by American Depositary Shares.

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act.

Yes No

If this report is an annual or transition report, indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934.

Yes No

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days.

Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files).

Yes No

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or an emerging growth company. See the definitions of "large accelerated filer," "accelerated filer," and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer

Accelerated filer

Non-accelerated filer

Emerging Growth Company

If an emerging growth company that prepares its financial statements in accordance with U.S. GAAP, indicate by check mark if the registrant has elected not to use the extended transition period for complying with any new or revised financial accounting standards provided pursuant to Section 13(a) of the Exchange Act.

Indicate by check mark which basis of accounting the registrant has used to prepare the financial statements included in this filing:

U.S. GAAP

International Financial Reporting Standards as issued by the International Accounting Standards Board

Other

If "Other" has been checked in response to the previous question, indicate by check mark which financial statement item the registrant has elected to follow.

Item 17 Item 18

If this is an annual report, indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

TABLE OF CONTENTS

<u>PART I</u>	1
<u>ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS</u>	1
<u>ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE</u>	1
<u>ITEM 3. KEY INFORMATION</u>	1
<u>ITEM 4. INFORMATION ON THE COMPANY</u>	24
<u>ITEM 4A. UNRESOLVED STAFF COMMENTS</u>	59
<u>ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS</u>	60
<u>ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES</u>	101
<u>ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS</u>	115
<u>ITEM 8. FINANCIAL INFORMATION</u>	119
<u>ITEM 9. THE OFFER AND LISTING</u>	121
<u>ITEM 10. ADDITIONAL INFORMATION</u>	121
<u>ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK</u>	134
<u>ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES</u>	135
<u>ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES</u>	136
<u>ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS</u>	136
<u>ITEM 15. CONTROLS AND PROCEDURES</u>	136
<u>ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT</u>	136
<u>ITEM 16B. CODE OF ETHICS</u>	136
<u>ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES</u>	137
<u>ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES</u>	138
<u>ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS</u>	138
<u>ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT</u>	138
<u>ITEM 16G. CORPORATE GOVERNANCE</u>	138
<u>ITEM 17. FINANCIAL STATEMENTS</u>	139
<u>ITEM 18. FINANCIAL STATEMENTS</u>	139
<u>ITEM 19. EXHIBITS</u>	140

INTRODUCTION

This annual report on Form 20-F contains various “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, and the Private Securities Litigation Reform Act of 1995, as amended, with respect to our business, financial condition and results of operations. Such forward-looking statements reflect our current view with respect to future events and financial results. Statements which use the terms “anticipate,” “believe,” “expect,” “plan,” “intend,” “estimate” and similar expressions are intended to identify forward looking statements. We remind readers that forward-looking statements are merely predictions and therefore inherently subject to uncertainties and other factors and involve known and unknown risks that could cause the actual results, performance, levels of activity, or our achievements, or industry results, to be materially different from any future results, performance, levels of activity, or our achievements expressed or implied by such forward-looking statements. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. Except as required by applicable law, including the securities laws of the United States, we undertake no obligation to publicly release any update or revision to any forward looking statements to reflect new information, future events or circumstances, or otherwise after the date hereof. We have attempted to identify significant uncertainties and other factors affecting forward-looking statements in the Risk Factors section that appears in Item 3 “Key Information— D. Risk Factors.”

Our consolidated financial statements appearing in this annual report are prepared in U.S. dollars and in accordance with International Financial Reporting Standards, or IFRS, as issued by the International Accounting Standards Board, or IASB. All references in this annual report to “dollars” or “\$” are to U.S. dollars and all references in this annual report to “NIS” are to New Israeli Shekels. References to the Israeli CPI refer to the Israeli consumer price index. References herein to the “ADSs” refer to our American Depositary Shares, each of which represents one ordinary share, par value NIS 1.0 per share, of our company.

Statements made in this annual report concerning the contents of any contract, agreement or other document are summaries of such contracts, agreements or documents and are not complete descriptions of all of their terms. If we have filed any of these documents as an exhibit to this annual report or to any previous filing with the Securities and Exchange Commission, or the SEC, you may read the document itself for a complete recitation of its terms.

As used in this annual report, references to “we,” “our,” “ours,” “our company,” “our Group” and “us” refer to Formula Systems (1985) Ltd. and its subsidiaries and affiliate company, unless otherwise indicated. References to “Formula” refer to Formula Systems (1985) Ltd. alone. Our operations are currently conducted through our subsidiaries— Matrix IT Ltd., or Matrix, Sapiens International Corporation N.V., or Sapiens, Magic Software Enterprises Ltd., or Magic Software, Michpal Micro Computers (1983) Ltd., or Michpal, and InSync Staffing Solutions, Inc., or InSync— and our affiliated company TSG Advanced IT Systems, Ltd., or TSG, in which we hold a 50% share interest.

All trademarks appearing in this annual report are the property of their respective holders.

PART I

ITEM 1. IDENTITY OF DIRECTORS, SENIOR MANAGEMENT AND ADVISERS

Not applicable.

ITEM 2. OFFER STATISTICS AND EXPECTED TIMETABLE

Not applicable.

ITEM 3. KEY INFORMATION

A. Selected Financial Data

The following tables present selected consolidated financial data as of the dates and for each of the periods indicated. Except where we have indicated otherwise, we have presented all of the consolidated financial information in this document in accordance with IFRS as issued by the IASB. Historically, we had prepared our consolidated financial statements in accordance with United States generally accepted accounting principles, or U.S. GAAP, for all periods up to and including the year ended December 31, 2015. For the year ended December 31, 2016, we transitioned our reporting to IFRS. In order to comply with requirements of the SEC related to our transition to IFRS, we set the date of transition as January 1, 2015 and retrospectively applied IFRS as of that date and for the year ended December 31, 2015. Accordingly, we have presented herein consolidated statements of financial position data that complies with IFRS applicable as of January 1, 2015, in addition to as of December 31, 2015, 2016, 2017 and 2018. Our consolidated statements of profit or loss data presented herein in accordance with IFRS covers the years ended December 31, 2016, 2017 and 2018, as well as the year ended December 31, 2015 (as adjusted from its prior presentation in accordance with U.S. GAAP).

Pursuant to the transitional relief granted by the SEC in respect of the first-time adoption of IFRS, we have only presented statements of profit or loss data for each fiscal year in the four-year period ended December 31, 2018 in accordance with IFRS. The selected statements of profit or loss data for the years ended December 31, 2016, 2017 and 2018, and the statements of financial position data as of December 31, 2017 and 2018, should be read in conjunction with, and are qualified in their entirety by, "Item 5. Operating and Financial Review and Prospects" and our audited consolidated financial statements and the notes thereto included in this annual report. The selected statements of profit or loss data for the year ended December 31, 2015, and the statements of financial position data as of January 1, 2015, and as of December 31, 2015 and 2016, have been derived from our previously filed audited consolidated financial statements, which are not included in this annual report. Our historical results set forth herein are not necessarily indicative of our future results.

Consolidated Statements of Profit or Loss Data

	Year ended December 31,			
	2015	2016	2017	2018
	U.S. dollars in thousands (except per share data)			
Revenues	973,194	1,108,621	1,355,139	1,492,988
Cost of revenues	741,270	849,840	1,058,316	1,159,676
Gross profit	231,924	258,781	296,823	333,312
Research and development expenses, net	15,123	22,328	39,853	41,223
Selling, marketing, general and administrative expenses	140,935	147,953	184,164	182,472
Operating income	75,866	88,500	72,806	109,617
Financial expenses	(14,955)	(17,594)	(29,870)	(15,852)
Financial income	5,422	6,008	8,751	7,562
Pre-tax income before share of profits of companies accounted for at equity, net	66,333	76,914	51,687	101,327
Taxes on income	15,984	21,163	13,371	24,301
Share of profits of companies accounted for at equity, net	5	349	1,124	369
Net income	50,354	56,100	39,440	77,395
Attributable to:				
Equity holders of the Company	19,829	22,445	10,352	32,365
Non-controlling interests	30,525	33,655	29,088	45,030
	50,354	56,100	39,440	77,395
Earnings per share (basic)	1.41	1.58	0.72	2.20
Earnings per share (diluted)	1.35	1.49	0.68	2.14
Number of shares used in computing earnings per share (basic)	14,071,210	14,213,719	14,436,763	14,740,462
Number of shares used in computing earnings per share (diluted)	14,665,365	15,525,261	14,731,603	15,571,838

Consolidated Statements of Financial Position Data:

	January 1,	December 31,			
	2015	2015	2016	2017	2018
			(U.S. Dollars in thousands)		
Total current assets	486,643	588,984	633,659	694,801	781,033
Total long-term assets	62,922	58,728	70,925	57,774	63,045
PROPERTY, PLANTS AND EQUIPMENT, NET	22,111	22,003	26,130	29,807	29,182
INTANGIBLE ASSETS AND GOODWILL, NET	534,219	545,677	623,808	781,255	790,901
TOTAL ASSETS	1,105,895	1,215,392	1,354,522	1,563,637	1,664,161
Total current liabilities	256,340	290,793	359,038	432,947	525,713
Total long-term liabilities	157,255	219,320	271,642	357,768	333,051
Total equity	692,300	705,279	723,842	772,922	805,397
TOTAL LIABILITIES AND EQUITY	1,105,895	1,215,392	1,354,522	1,563,637	1,664,161

Dividends

In December 2018, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in January 2019. The aggregate amount distributed by Formula was approximately \$5.0 million.

In May 2018, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in June 2018. The aggregate amount distributed by Formula was approximately \$5.0 million.

In September 2017, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in November 2017. The aggregate amount distributed by Formula was approximately \$5.0 million.

In December 2016, Formula declared a cash dividend to its shareholders of \$0.48 per share, which was paid in January 2017. The aggregate amount distributed by Formula was approximately \$7.1 million.

In June 2016, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in July 2016. The aggregate amount distributed by Formula was approximately \$5.0 million.

In January 2016, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in February 2016. The aggregate amount distributed by Formula was approximately \$5.0 million.

In June 2015, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in August 2015. The aggregate amount distributed by Formula was approximately \$5.0 million.

Cash dividends may be declared and paid in NIS or dollars. Dividends to the holders of Formula's American Depositary Shares, or ADSs, are paid by the depositary of the ADSs, for the benefit of owners of ADSs. If a dividend is declared and paid in NIS in Israel, the NIS amount is converted into, and paid out in, dollars by the depositary of the ADSs.

B. Capitalization and Indebtedness

Not applicable.

C. Reasons for the Offer and Use of Proceeds

Not applicable.

D. Risk Factors

Our business prospects, operating results and financial condition could be seriously harmed due to any of the following risks. Additional risks and uncertainties that we are not aware of or that we currently believe are immaterial may also adversely affect our business prospects, financial condition, and results of operations. The trading prices of our ordinary shares and ADSs could decline due to any of these risks, and you may lose all or part of your investment.

Risks Related to Our Business and Our Industry

Rapid technological changes may adversely affect the market acceptance of our products and services, and our business, results of operations and financial condition could be adversely affected.

We compete in markets that are characterized by rapid technological changes. Other companies are also seeking to offer software solutions and other products and services in our markets, including enterprise mobility solutions, digital transformation solutions, big data and data analytics solutions, Internet of Things (IOT) solutions, cyber solutions, business intelligence (BI) solutions, AI and machine learning solutions, internet-related solutions, such as cloud computing and complementary services and business solutions for the insurance and financial services industry. These companies may develop technological or business model innovations or offer services in the markets that we seek to address that are, or are perceived to be, equivalent or superior to our products and services. Furthermore, many of our smaller competitors have been acquired and may be acquired in the future by larger competitors, which provides such smaller competitors with greater resources and potentially a larger client base for which they can develop solutions. Our customers or potential customers may prefer suppliers that are larger than us, are better known in the market or that have a greater global reach.

In addition, our customers' business models may change in ways that we do not anticipate and these changes could reduce or eliminate our customers' needs for our products and services. Our operating results depend on our ability to adapt to market changes and develop and introduce new products and services into existing and emerging markets.

The introduction of new technologies, devices and business models could render existing products and services obsolete and unmarketable and could exert price pressures on our products and services. Our future success will depend upon our ability to address the increasingly sophisticated needs of our customers by:

- Supporting existing and emerging hardware, software, databases and networking platforms; and
- Developing and introducing new and enhanced software development technology and applications that keep pace with such technological developments, emerging new product markets and changing customer requirements.

The market for software solutions and related services and for business solutions is highly competitive. Many of our smaller competitors have been acquired by larger competitors, which provides such smaller competitors with greater resources and potentially a larger client base for which they can develop solutions. Our customers or potential customers may prefer suppliers that are larger than us, are better known in the market, or that have a greater global reach. In addition, we and some of our competitors have developed business models to allow customers to outsource their core systems to external providers (known as BPO). We are seeking to partner with BPO providers, but there can be no assurance that such BPO providers will adopt our solutions rather than those of our competitors. Determinations by current and potential customers to use BPO providers that do not use our solutions may result in the loss of such customers and limit our ability to gain new customers.

Adapting to evolving technologies can require substantial financial investments, distract management and adversely affect the demand for our existing products and services.

Adapting to evolving technologies may require us to invest a significant amount of resources, time and attention into the development, integration, support and marketing of products and services that work with or utilize those technologies. For example, the acceptance and growth of cloud computing, enterprise mobility, security and cyber and digital are examples of rapid technological changes which we have adapted into our products, packaged software solution and software services offerings. Developing and implementing cloud computing, enterprise mobility, security and cyber and digital into certain of our software solution models and software services offerings required us to make substantial investments and required significant attention from our management to refine our business strategies to include the delivery of these solutions. As the market continues to adopt new technologies, we expect to continue to make substantial investments in our software solutions, system integrations and professional services related to these changing technologies. Even if we succeed in adapting to a new technology by developing attractive products and services and successfully bringing them to market, there is no assurance that the new product or service will have a positive impact on our financial performance and could even result in lower revenue, lower margins and higher costs and therefore could negatively impact our financial performance.

Unfavorable national or global economic conditions could adversely affect our business, operating results and financial condition.

During periods of slowing economic activity our customers may reduce their demand for our products, technology and software services, which would reduce our sales, and our business, operating results and financial condition may be adversely affected. Economies throughout the world currently face a number of challenges, including threatened sovereign defaults, credit downgrades, restricted credit for businesses and consumers and potentially falling demand for a variety of products and services. Notwithstanding the improved economic conditions in some of our markets, many companies are still cutting back expenditures or delaying plans to add additional personnel or systems. Any worsening of global economic conditions could result in longer sales cycles, slower adoption of new technologies and increased price competition for our products and services. We could also be exposed to credit risk and payment delinquencies on our accounts receivable, which are not covered by collateral. Any of these events would likely harm our business, operating results and financial condition.

These developments, or the perception that any of them could occur, could have a material adverse effect on global economic conditions and the stability of global financial markets, and could significantly reduce global market liquidity and restrict the ability of key market participants to operate in certain financial markets. Asset valuations, currency exchange rates and credit ratings may be especially subject to increased market volatility.

The U.S. Tax Cuts and Jobs Act of 2017, or the U.S. Tax Act, enacted in December 2017, introduced significant changes to the U.S. Internal Revenue Code. The primary impact of the U.S. Tax Act on us was a reduction of our effective tax rate in the U.S. The expected impact of the U.S. Tax Act may differ from the tax expense that we actually incur, due to, among other things, possible changes in the interpretations and assumptions made by us as a result of additional information, additional guidance that may be issued by the U.S. Department of Treasury, the Internal Revenue Service, or IRS, or other standard-setting bodies. There may be additional tax effects of the U.S. Tax Act that may impact our future financial statements once additional laws, regulations, and/or guidance are enacted or issued (as applicable), which we will account for at that time.

If global economic and market conditions, or economic conditions in the United States, Europe or Asia or other key markets, remain uncertain (where applicable) or weaken, our business, operating results and financial condition may be adversely affected.

Our development cycles are lengthy, we may not have the resources available to complete development of new, enhanced or modified, solutions and we may incur significant expenses before we generate revenues, if any, from our solutions.

Because certain of our solutions are complex and require rigorous testing, development cycles can be lengthy, taking us up to two years to develop and introduce new, enhanced or modified solutions. Moreover, development projects can be technically challenging and expensive. The nature of these development cycles may cause us to experience delays between the time we incur expenses associated with research and development and the time we generate revenues, if any, from such expenses. We may also not have sufficient funds or other resources to make the required investments in product development. Furthermore, we may invest substantial resources in the development of solutions that do not achieve market acceptance or commercial success. Even where we succeed in our sales efforts and obtain new orders from customers, the complexity involved in delivering our solutions to such customers makes it more difficult for us to consummate delivery in a timely manner and to recognize revenue and maximize profitability. Failure to deliver our solutions in a timely manner could result in order cancellations, damage our reputations and require us to indemnify our customers. Any of these risks relating to our lengthy and expensive development cycle could have a material adverse effect on our business, financial conditions and results of operations.

Our sales cycle is variable, depends upon many factors outside our control, and could cause us to expend significant time and resources prior to earning associated revenues.

The typical sales cycle for certain of our solutions and services is lengthy and unpredictable, requires pre-purchase evaluation by a significant number of persons in our customers' organizations, and often involves a significant operational decision by our customers. Our sales efforts involve educating our customers and industry analysts and consultants about the use and benefits of our solutions, including the technical capabilities of our solutions and the efficiencies achievable by organizations deploying our solutions. Customers typically undertake a significant evaluation process, which frequently involves not only our solutions, but also those of our competitors and can result in a lengthy sales cycle. Our sales cycle for new customers is typically one year to two years and can extend even longer in some cases. We spend substantial time, effort and money in our sales efforts without any assurance that such efforts will produce any sales.

Investment in highly skilled research and development and customer support personnel is critical to our ability to develop and enhance our solutions and support our customers, but an increase in such investment may reduce our profitability.

As a provider of software solutions that rely upon technological advancements, we rely heavily on our research and development activities to remain competitive. We consequently depend in large part on the ability to attract, train, motivate and retain highly skilled information technology professionals for our research and development team, particularly individuals with knowledge and experience in the insurance industry. Because our software solutions are highly complex and are generally used by our customers to perform critical business functions, we also depend heavily on other skilled technology professionals to provide ongoing support to our customers. Skilled technology professionals are often in high demand and short supply. If we are unable to hire or retain qualified research and development personnel and other technology professionals to develop, implement and modify our solutions, we may be unable to meet the needs of our customers. Even if we succeed in retaining the necessary skilled personnel in our research and development and customer support efforts, our investments in our personnel and product development efforts increase our costs of operations and thereby reduce our profitability, unless accompanied by increased revenues. Given the highly competitive industry in which we operate, we may not succeed in increasing our revenues in line with our increasing investments in our personnel and research and development efforts.

Furthermore, as we seek to expand the marketing and offering of our products and services into new territories, it requires the retention of new, additional skilled personnel with knowledge of the particular market and applicable regulatory regime. Such skilled personnel may not be available at a reasonable cost relative to the additional revenues that we expect to generate in those territories, or may not be available at all. In particular, wage costs in lower-cost markets where we have recently added personnel, such as India, are increasing and we may need to increase the levels of our employee compensation more rapidly than in the past to remain competitive. The transition of projects to new locations may also lead to business disruptions due to differing levels of employee knowledge and organizational and leadership skills. Although we have never experienced an organized labor dispute, strike or work stoppage, any such occurrence, including in connection with unionization efforts, could disrupt our business and operations and harm our financial condition.

If our products and services fail to compete successfully with those of our competitors, we may have to reduce the prices of our products and services, which, in turn, may adversely affect our business.

We face competition, both in Israel and internationally, from a variety of companies, including companies with significantly greater resources than ours who are likely to enjoy substantial competitive advantages, including:

- longer operating histories;
- closer proximity to future markets;
- greater financial, technical, marketing and other resources;
- cheaper costs, including labor cost;
- political leverage;
- greater name recognition;
- well-established relationships with our current and potential clients; and
- a broader range of products and services.

Both Matrix's and Magic Software's principal domestic competitors in the Israeli market are Israeli IT services companies and systems integrators, the largest of which are IBM Israel, HP Israel, Hilan Ltd., Malam-Team, One-1, Taldor Computer Systems, Tefen, Aman, the Elad Group, Yael, SQLink, Emet, LogOn and HMS. In addition, in recent years, large accounting and advisory firms such as Deloitte and E&Y have expanded their service portfolio to include managed services and consulting in the fields of BI, Cybersecurity, ERP and CRM, which we see as direct competition, especially as they already have a deep understanding of the relevant client's business because of the accounting and auditing services they provide to it, and because they already have earned the trust of the client, which is an essential part of providing any services to a client. This international trend is as evident in Israel as it is in all major markets around the world. Matrix's competitors in the United States market include many companies that provide similar services to those offered by Matrix, as well as providers of offshore services, which charge low rates. In some cases, Matrix competes with IBM, Accenture and the large accounting and advisory firms. Matrix's international competitors in the Israeli market include Microsoft, IBM, HP, Oracle and CA. These international competitors often use local subcontractors to provide personnel for contracts performed in Israel. Most of these international entities are also business partners of Matrix. Competitors with respect to infrastructure solutions include HP, Lenovo and Dell. With respect to cloud services, competitors include All Cloud, DoIT, Google, Microsoft and Amazon Web Services. Matrix's competitors with respect to training are the training centers of the Technion, IITC, HackerU, Ness Technologies, SQLink and Sela.

Furthermore, several software development centers in Israel and worldwide offer software development services at lower prices than we do. Due to the intense competition in the markets in which we operate, software products and services prices may fluctuate significantly. As a result, we may have to reduce the prices of our products, which in turn, may adversely affect our revenues and the gross margins for our products.

With respect to Magic Software's application development solutions, Magic Software competes in the application platform, SOA architecture and enterprise mobility markets. Among its current competitors are Kony, IBM, Microsoft, Adobe, Oracle, SAP Sybase, OutSystems and Pegasystems. With respect to Magic Software's integration solutions, Magic Software competes in the integration platform market. Among its current competitors are IBM, Informatica, TIBCO, Scribe Software, MuleSoft, Jitterbit, Talend and Software AG.

There are several similar products in the market which utilize the model driven architecture, or MDA, approach utilized by Magic Software's application development solutions. The market for this type of platform is highly competitive. Companies such as CA and IBM have tools that compete directly with those of Magic Software. Furthermore, new development paradigms have become very popular in IT software development and developers today have many alternatives.

The telecom BSS domain in which Magic Software operates through its wholly owned FTS subsidiary is a highly competitive market in which FTS competes based on product quality, service quality, timeliness of delivery and pricing. Within the global billing, charging and policy control market, FTS principally competes against global IT providers and the in-house IT departments of telecommunications operators. Among the competitors focused on this market are Amdocs, Ericsson, Comverse, NetCracker Technology, CSG Systems, Redknee Solutions and Oracle Communications.

There are also a number of smaller or regional telecom BSS competitors who compete on a regional or domestic market level. These tend to be smaller players, and may include companies such as Comarch, Mind CTI, Tecnotree, Cerillion, Openet and Elitcore, among others.

Sapiens' competitors in the insurance software solutions market differ based on the size, geography and lines of business in which it operates. Some of its competitors offer a full suite of services, while others only offer one module; some operate in specific (domestic) geographies, while others operate on a global basis. In addition, delivery models vary, with some competitors keeping delivery in-house, or using IT outsourcing (ITO) or business process outsourcing (BPO).

Examples of Sapiens' primary competitors are:

- Global software providers with their own IP;
- Local/domestic software vendors with their own IP, operating in a designated geographic market and/or within a designated segment of the insurance industry;
- BPO providers who offer end-to-end outsourcing of insurance carriers business, including core software administration (although BPO providers want to buy comprehensive software platforms to serve as part of the BPO proposition from vendors and may seek to purchase Sapiens' solutions for this purpose);
- Internal IT departments, who often prefer to develop solutions in-house; and
- New insurtech companies with niche solutions.

With respect to Sapiens DECISION, we believe that Sapiens is considered a pioneer in this disruptive market landscape. Since the introduction of Sapiens innovative approach to enterprise architecture to the market, Sapiens has identified only a small number of potential competitors.

These competitors may be able to respond more quickly to new or emerging technologies or changes in customer requirements. They may also benefit from greater purchasing economies, offer more aggressive product and service pricing or devote greater resources to the promotion of their products and services. Current and potential competitors have established or may establish cooperative relationships among themselves or with third parties to increase such competitors' ability to successfully market their tools and services. We also expect that competition will increase as a result of continued consolidation within the industry. Our further penetration of international markets may likewise cause us to face additional competition. As a result, we cannot assure you that the products and solutions that we offer will compete successfully with those of our competitors.

We may be unable to differentiate our tools and services from those of our competitors or successfully develop and introduce new tools and services that are less costly than, or superior to, those of our competitors. This could have a material adverse effect on our ability to compete.

As some of our revenues are derived from the Israeli government sector, including defense, healthcare, education and finance, a reduction of government spending in Israel on IT services may reduce our revenues and profitability; and any delay in the annual budget approval process may negatively impact our cash flows.

We perform work for a wide range of Israeli governmental agencies and related subcontractors. Any reduction in total Israeli government spending for political or economic reasons may reduce our revenues and profitability. In addition, the government of Israel has occasionally experienced significant delays in the approval of its annual budget in recent years. Such delays in the future could negatively affect our cash flows by delaying the receipt of payments from the government of Israel for services performed.

TSG, our jointly-controlled affiliate, together with Israel Aerospace Industries Ltd. or IAI, derives most of its revenues directly or indirectly from government agencies, mainly the Israeli Ministry of Defense (IMOD) and authorities of various countries, pursuant to contracts awarded to it under defense and homeland security-related programs. The funding of these programs could be reduced or eliminated due to numerous factors, including geo-political events and macro-economic conditions that are beyond our control. Reduction or elimination of government spending under those contracts would cause a negative effect on TSG's revenues, results of operations, cash flow and financial condition. Furthermore, the Israeli government may reduce its expenditures for defense items or change its defense priorities in the coming years. In addition, the Israeli defense budget may be adversely affected if there is a reduction in U.S. foreign military assistance.

We recently began preparing our consolidated financial statements in accordance with IFRS as issued by the IASB and, as a result, some of our financial data is not easily comparable from period to period.

On January 1, 2016, we began preparing our consolidated financial statements in accordance with IFRS as issued by the IASB. Prior to the year ended December 31, 2016, we prepared our consolidated financial statements only in accordance with U.S. GAAP. Therefore, our financial data as of and for all years through the year ended December 31, 2015, which was presented in our annual reports on Form 20-F covering all years through the year ended December 31, 2015, was derived from our annual audited consolidated financial statements that were prepared in accordance with U.S. GAAP. As part of our transition to IFRS, we set the date of transition as January 1, 2015 and retrospectively applied IFRS as of that date and for the year ended December 31, 2015 as well. Because IFRS differs in certain significant respects from U.S. GAAP, in particular with respect to the results of our subsidiaries, all of which are consolidated with our results under IFRS, the U.S. GAAP financial information for years prior to 2015 is not directly comparable to our IFRS financial information (commencing with information for year 2015) presented in this annual report. The lack of comparability of our financial data may make it difficult to gain a full and accurate understanding of our operations and financial condition in periods prior to 2015.

Our clients' complex regulatory requirements may increase our costs, which could negatively impact our profits.

Some of our clients, particularly those in the financial services, life sciences, healthcare and defense verticals, are subject to complex and constantly changing regulatory requirements. On occasion, these regulatory requirements change unpredictably. These regulations may increase our potential liabilities if our services are found to contribute to a failure by our clients to comply with the requirements applicable to them and may increase compliance costs as regulatory requirements increase or change. These increased costs could negatively impact our profits.

With respect to certain of our defense sector command and control software solutions which are developed and offered by our jointly controlled investee, TSG, we depend on governmental approval of our exports.

Our international sales, as well as our international procurement of skilled human resources, technology and components, related to our command and control, cyber and intelligence software solutions, depends largely on export license approvals from the governments of Israel, the U.S. and other countries. If we fail to obtain material approvals in the future, or if material approvals previously obtained are revoked or expire and are not renewed, our ability to sell our products and services to overseas customers and our ability to obtain goods and services essential to TSG's business could be interrupted, resulting in a material adverse effect on TSG's business, revenues, assets, liabilities and results of operations.

If existing customers are not satisfied with our solutions and services and either do not make subsequent purchases from us or do not continue using our solutions and services, or if our relationships with our largest customers are impaired, our revenue could be negatively affected.

Certain of our subsidiaries depend heavily on repeat product and service revenues from their base of existing customers. For example, five of Sapiens' customers accounted for, in the aggregate, 22% and 20.7% of its revenues in the years ended December 31, 2017 and 2018, respectively. Five of Magic's customers accounted for, in the aggregate, 27% of its revenues in each of the years ended December 31, 2017 and 2018.

If our existing customers are not satisfied with our solutions and services, they may not enter into new project contracts with us or continue using our technologies. A significant decline in our revenue stream from existing customers would have a material adverse effect on our business, results of operations and financial condition.

Our business involves long-term, large projects, some of which are fixed-price projects that involve uncertainties, such as estimated project costs and profit margins, and which can therefore adversely affect our results of operations.

Our business is characterized by relatively large, complex projects or engagements that can have a significant impact on our total revenue and cost of revenue from quarter to quarter. A high percentage of our expenses, particularly employee compensation, are relatively fixed. Therefore, variations in the timing of the initiation, estimate of scope of work, progress or completion of projects or engagements can cause significant variations in operating results from quarter to quarter.

This is particularly the case for fixed-price contracts, where our delivery requirements sometimes span more than one year. For a highly complex, fixed-price project that requires customization, we may not be able to accurately estimate our actual costs of completing the project. We are often dependent on the assistance of third-parties (such as our customers' vendors or IT employees, or our system integrator partners) in implementing such a project, which may not be provided in a timely manner. If our actual cost-to-completion of such a project significantly exceeds the estimated costs, we could experience a loss on the related contract, which (when multiplied by multiple projects) could have a material adverse effect on our results of operations, financial position and cash flow.

Similarly, delays in executing client contracts (whether fixed price or not) may affect our revenue and cause our operating results to vary widely. Certain of our solutions are delivered over periods of time ranging from several months to a few years. Payment terms are generally based on periodic payments or on the achievement of milestones. Any delays in payment or in the achievement of milestones may have a material adverse effect on our results of operations, financial position or cash flows.

If our customers terminate contracted projects or choose not to retain us for additional projects, our revenues and profitability may be negatively affected.

Our software services customers typically retain us on a non-exclusive basis. Many of our customer contracts, including those that are on a fixed price and timeframe basis, can be terminated by the customer with or without cause upon 90 days' notice or less, and generally without termination-related penalties. Additionally, our contracts with customers are typically limited to discrete projects without any commitment to a specific volume of business or future work and may involve multiple stages. In addition, the increased breadth of our service offerings may result in larger and more complex projects for our customers that require us to devote resources to more thoroughly understand their operations. Despite these efforts, our customers may choose not to retain us for additional stages or may cancel or delay planned or existing engagements due to any number of factors, including:

- financial difficulties;
- a change in strategic priorities;
- demand for price reductions; and
- a decision to utilize in-house IT capacity or work with our competitors.

These potential terminations, cancellations or delays in planned or existing engagements could make it difficult for us to use our personnel efficiently and may negatively impact our revenues and profitability.

As an example, in 2017 Sapiens was involved in a dispute with a significant customer (which accounted for approximately 12% of Sapiens' revenues in 2016) under a software development project agreement, which agreement provided for the customizing, enhancement and implementation of a new product. The customer alleged that Sapiens had materially breached its agreement with the customer. After carefully examining the customer's allegations, Sapiens informed the customer that it had not materially breached any of its obligations under the agreement and that the customer had itself materially breached the agreement. Work on the project was cancelled due to the dispute. While Sapiens eventually entered into a settlement agreement with the customer, that settlement resulted in the termination of the software development project agreement, which resulted in a reduction in Sapiens' revenues and operating profit relative to its prior estimates for 2017. Similar such disputes with other significant customers in the future, whether due to our failure to meet upfront estimates or customer expectations, or even absent such failures on our part, could harm our reputation, thereby adversely affecting our ability to attract new customers and to sell additional solutions and services to existing customers.

As a further example, in 2018, a South African customer of Sapiens changed the scope of an ongoing project significantly, which resulted in a decrease in the revenues realized from that customer during 2018. The project, as originally planned, will not continue. That decrease in revenues adversely impacted Sapiens' revenues in 2018.

We may be liable to our clients for damages caused by a violation of intellectual property rights, the disclosure of other confidential information, including personally identifiable information, system failures, errors or unsatisfactory performance of services, and our insurance policies may not be sufficient to cover these damages.

We often have access to, and are required to collect and store, sensitive or confidential client information, including personally identifiable information. Some of our client agreements do not limit our potential liability for breaches of confidentiality, infringement indemnity and certain other matters. Furthermore, breaches of confidentiality may entitle the aggrieved party to equitable remedies, including injunctive relief. If any person, including any of our employees and subcontractors, penetrates our network security or misappropriates sensitive or confidential client information, including personally identifiable information, we could be subject to significant liability from our clients or from our clients' customers for breaching contractual confidentiality provisions or privacy laws. Despite measures we take to protect the intellectual property and other confidential information or personally identifiable information of our clients, unauthorized parties, including our employees and subcontractors, may attempt to misappropriate certain intellectual property rights that are proprietary to our clients or otherwise breach our clients' confidences. Unauthorized disclosure of sensitive or confidential client information, including personally identifiable information, or a violation of intellectual property rights, whether through employee misconduct, breach of our computer systems, systems failure or otherwise, may subject us to liabilities, damage our reputation and cause us to lose clients.

Many of our contracts involve projects that are critical to the operations of our clients' businesses and provide benefits to our clients that may be difficult to quantify. Any failure in a client's system or any breach of security could result in a claim for substantial damages against us, regardless of our responsibility for such failure. Furthermore, any errors by our employees in the performance of services for a client, or poor execution of such services, could result in a client terminating our engagement and seeking damages from us.

In addition, while we have taken steps to protect the confidential information that we have access to, including confidential information we may obtain through usage of our cloud-based services, our security measures may be breached. If a cyber-attack or other security incident were to result in unauthorized access to or modification of our customers' data or our own data or our IT systems or in disruption of the services we provide to our customers, or if our products or services are perceived as having security vulnerabilities, we could suffer significant damage to our business and reputation.

Although we attempt to limit our contractual liability for consequential damages in rendering our services, these limitations on liability may not apply in all circumstances, may be unenforceable in some cases, or may be insufficient to protect us from liability for damages. There may be instances when liabilities for damages are greater than the insurance coverage we hold and we will have to internalize those losses, damages and liabilities not covered by our insurance.

Changes in privacy regulations may impose additional costs and liabilities on us, limit our use of information, and adversely affect our business.

Personal privacy has become a significant issue in the United States, Europe, and many other countries where we operate. Many government agencies and industry regulators continue to impose new restrictions and modify existing requirements about the collection, use, and disclosure of personal information. Changes to laws or regulations affecting privacy and security may impose additional liability and costs on us and may limit our use of such information in providing our services to customers. If we were required to change our business activities, revise or eliminate services or products, or implement burdensome compliance measures, our business and results of operations may be harmed. Additionally, we may be subject to regulatory enforcement actions resulting in fines, penalties, and potential litigation if we fail to comply with applicable privacy laws and regulations.

In particular, our European activities are subject to the new European Union General Data Protection Regulation, or GDPR, which has created additional compliance requirements for us. GDPR broadens the scope of personal privacy laws to protect the rights of European Union citizens and requires organizations to report on data breaches within 72 hours and be bound by more stringent rules for obtaining the consent of individuals on how their data can be used. GDPR became enforceable on May 25, 2018 and non-compliance may expose entities such as our company to significant fines or other regulatory claims. While we have invested in, and intend to continue to invest in, reasonably necessary resources to comply with these new standards, to the extent that we fail to adequately comply, that failure could have an adverse effect on our business, financial conditions, results of operations and cash flows.

If we fail to locate, successfully compete for and consummate suitable acquisitions and investments, we may be unable to grow or maintain our market share.

We and our subsidiaries consider it a significant part of our business strategy to pursue acquisitions and other initiatives in order to expand our product or services offerings or otherwise enhance our market position and strategic strengths. Consequently, we intend to pursue acquisitions of, and investments in, other businesses, particularly businesses offering products, technologies and services that are complementary to ours and are suitable for integration into our business. We cannot assure you that we will be able to locate suitable potential acquisition or investment opportunities in Israel or internationally, or if we do identify suitable candidates, that at the conclusion of related discussions and negotiations, we will be able to consummate the acquisitions or investments on terms which are favorable to us. If and when acquisition or investment opportunities arise, we expect to compete for these opportunities with other established and well-capitalized entities and we cannot guarantee that we will succeed in such competition on terms which remain favorable to us. If we fail to consummate further acquisitions or investments in the future, our ability to grow or to even maintain our market share may be harmed.

Any future acquisitions of, or investments in, companies or technologies, especially those located outside of Israel, may distract our management, disrupt our business and may be difficult to finance on favorable terms.

As described above, it is a significant part of our Group's strategy to pursue acquisitions of, and investments in, companies offering products, technologies and services in order to expand our product offerings or services or otherwise enhance our market position and strategic strengths. In the past three years we made a number of acquisitions, including each of the acquisitions described below in "Item 4. Information on the Company— A. History and Development of the Company-- Capital Expenditures and Divestitures."

Mergers and acquisitions of companies are inherently risky and subject to many factors outside of our control and no assurance can be given that our future acquisitions will be successful and will not adversely affect our business, operating results, or financial condition. In the future, we may seek to acquire or make strategic investments in complementary businesses, technologies, services or products, or enter into strategic partnerships or alliances with third parties in order to expand our business. Failure to manage and successfully integrate such acquisitions could materially harm our business and operating results. Prior acquisitions have resulted in a wide range of outcomes, from successful introduction of new products technologies and professional services to a failure to do so. Even when an acquired company has previously developed and marketed products, there can be no assurance that new product enhancements will be made in a timely manner or that pre-acquisition due diligence will have identified all possible issues that might arise with respect to such products. If we acquire other businesses, we may face difficulties, including:

- Difficulties in integrating the operations, systems, technologies, products, and personnel of the acquired businesses or enterprises;
- Diversion of management's attention from normal daily operations of the business and the challenges of managing larger and more widespread operations resulting from acquisitions;
- Potential difficulties in completing projects associated with in-process research and development;
- Difficulties in entering markets in which we have no or limited direct prior experience and where competitors in such markets have stronger market positions;
- Insufficient revenue to offset increased expenses associated with acquisitions; and
- The potential loss of key employees, customers, distributors, vendors and other business partners of the companies we acquire following and continuing after announcement of acquisition plans.

Furthermore, we may not be able to retain the key employees that may be necessary to operate the businesses we acquired and may acquire and we may not be able to timely attract new skilled employees and management to replace them. An acquisition may also involve accounting charges and/or amortization of significant amounts of intangible assets, which would adversely affect our ability to achieve and maintain profitability. These difficulties could disrupt our ongoing business, distract our management and employees, increase our expenses and adversely affect our results of operations.

Any acquisition or investment in a company located outside of Israel poses additional risks, including risks related to the monitoring of a management team from a great distance and the need to integrate a potentially different business culture. Our failure to successfully integrate such a newly acquired business or such an investment could harm our business.

We may furthermore need to raise capital in connection with any such acquisition or investment, which we would likely seek via public or private equity or debt offerings. For example, we issued \$58.3 million (net of issuance expenses) of secured debentures, or Series A Secured Debentures, and convertible debentures, or Series B Convertible Debentures as part of a public offering in Israel in September 2015, an additional \$44.1 million of Series A Secured Debentures via a private placement in Israel in January 2018, and \$82.3 million of Series C Secured Debentures via a public offering in Israel in March 2019. In July 2018, Magic Software consummated a private placement in which it received net proceeds of \$34.6 million. Furthermore, in September 2017, Sapiens issued NIS 280 million (approximately \$78.2 million, net of \$0.96 million of debt discount and issuance costs) principal amount of Series B unsecured, non-convertible debentures, in a public offering and private placement in Israel. Proceeds of such offering were utilized to repay the entire outstanding loan amount (including accrued interest) under a credit agreement that had been entered into in connection with Sapiens' acquisition of StoneRiver. The issuance of equity securities pursuant to any such financing could be dilutive to our existing shareholders. The issuance of equity securities by any of our investees pursuant to any such financing could be dilutive to our existing interest in these investees. If we raise funds through debt offerings, we may be pressured in serving such debt. If we use cash or debt financing, our financial liquidity will be reduced, the holders of our debt may have claims on our assets ahead of holders of our ordinary shares and our business operations may be restricted by the terms of any debt. Our ability to raise capital in this manner also depends upon market and other conditions, many of which are beyond our control. Due to unfavorable conditions, we could be required to seek alternative financing methods, such as bank financings, which involve borrowing money on terms that are not favorable to us. Difficulties in raising equity capital or obtaining debt financing on favorable terms, or the unavailability of financing, including bank borrowings, may hinder our ability to implement our strategy for selective acquisitions and investments.

If we fail to manage our growth, our business could be disrupted and our profitability will likely decline.

We have experienced rapid growth during the last five years, through acquisitions and organic growth. The number of our employees (including our affiliated company TSG) increased over the last five years from approximately 8,758 as of December 31, 2013 to approximately 15,101 as of December 31, 2018, and may increase further as we aim to further expand our businesses. This increase may significantly strain our management and other operational and financial resources. In particular, continued headcount growth increases the integration challenges involved in:

- recruiting, training and retaining skilled technical, marketing and management personnel;
- maintaining high quality standards;
- preserving our corporate culture, values and entrepreneurial environment;
- developing and improving our internal administrative infrastructure, particularly our financial, operational, communications and other internal controls; and
- maintaining high levels of client satisfaction.

The rapid execution necessary to exploit the market for our business model requires an effective planning and management process. Our systems, procedures or controls may not be adequate to support the growth in our operations, and our management may not be able to achieve the rapid execution necessary to exploit the market for our business model. Our future operating results will also depend on our ability to expand our development, sales and marketing organizations. If we are unable to manage growth effectively, our profitability will likely decline.

The increasing amount of intangible assets and goodwill recorded on our balance sheet may lead to significant impairment charges in the future.

We regularly review our long-lived assets, including identifiable intangible assets and goodwill, for impairment. Goodwill and indefinite life intangible assets are subject to impairment review at least annually. Other long-lived assets are reviewed when there is an indication that impairment may have occurred. The amount of goodwill and identifiable intangible assets on our consolidated balance sheet was \$623.8 million, \$781.3 million and \$791.7 million as of December 31, 2016, 2017 and 2018, respectively, as a result of our acquisitions, and may increase further following future acquisitions. Impairment testing under IFRS may lead to further impairment charges in the future. Any significant impairment charges could have a material adverse effect on our results of operations.

During the years ended December 31, 2017 and 2018, no impairment was required for any of our cash generating units and no impairment losses were identified for these intangible assets and software products.

Our and our investees' credit facility agreements with banks and other financial institutions, and our and our investees' debentures, are subject to a number of restrictive covenants which, if breached, could result in acceleration of our obligation to repay our debt.

In the context of our and our subsidiaries' and affiliate's engagements with banks and other financial institutions for receiving various credit facilities and under the terms governing our Series A Secured Debentures and Series C Secured Debentures, and Sapiens' non-convertible debentures, we have undertaken to comply with a number of conditions and limitations on the manner in which we can operate our business. These include limitations on our ability to undergo a change of control, distribute dividends, incur debt or a floating charge on our assets, or undergo an asset sale or other change that results in a fundamental change in our operations. These credit facilities, agreements and deed of trusts that we have entered into with the trustees for the holders of each of our debentures also require us to comply with certain financial covenants. Those covenants include maintenance of certain financial ratios related to shareholders' equity, total rate of debt and liabilities, minimum outstanding balance of total cash and short-term investments, and operating results that are customary for companies of comparable size, and maintenance of a minimum rating level for the debentures. These limitations and covenants may force us to pursue less than optimal business strategies or forego business arrangements which could have been financially advantageous to us and, by extension, to our shareholders. The deeds of trust of each of our debentures furthermore provides for an upwards adjustment in the interest rate payable under the debentures in the event that our debentures' rating is downgraded below a certain level. A breach of the financial covenants for more than two successive quarters or a substantial downgrade in the rating of any of our debentures (below BBB-) would constitute an event of default that could result in the acceleration of our obligation to repay the debentures, which accelerated repayment may be difficult for us to effect. In addition, we have secured a credit facility and our Series A Secured Debentures and Series C Secured Debentures with certain of the shares of Formula's publicly held subsidiaries Matrix, Sapiens and Magic Software, and affiliate TSG. A breach of the restrictive covenants could result in the acceleration of our obligations to repay our or our subsidiaries' debt.

Marketing our products and services in international markets may require increased expenses and greater exposure to risks that we may not be able to successfully address.

We intend to continue to focus our efforts on selling proprietary and nonproprietary software solutions and services in international markets and to devote significant resources to these efforts to expand our international operations as part of our growth strategy. If we are unable to continue achieving market acceptance for our solutions or continue to successfully penetrate international markets, our business will be harmed. In 2017 and 2018, we received approximately 38% and 40% of our consolidated revenues, respectively, from customers located outside of Israel (including but not limited to the United States, Europe, Japan, Asia-Pacific, India and South Africa). The expansion of our existing operations and entry into additional international markets will require significant management attention and financial resources which could adversely affect our business.

Our current international operations and our plans to further expand our international operations subjects us to many risks inherent to international business activities, including:

- Limitations and disruptions resulting from the imposition of government controls;
- Compliance with a wide variety of foreign regulatory standards;
- Compliance with the U.S. Foreign Corrupt Practices Act of 1977, as amended, or FCPA, particularly in emerging market countries;
- Import and export license requirements, tariffs, taxes and other trade barriers;
- Political, social and economic instability abroad, terrorist attacks and security concerns in general.;
- Trade restrictions;
- Changes in tariffs;
- Increased exposure to fluctuations in foreign currency exchange rates;
- Complexity in our tax planning, and increased exposure to changes in tax regulations in various jurisdictions in which we operate, which could adversely affect our operating results and limit our ability to conduct effective tax planning;
- Increased financial accounting and reporting requirements and complexities;
- Weaker protection of intellectual property rights in some countries;
- Greater difficulty in safeguarding intellectual property;
- Increased management, travel, infrastructure and legal compliance costs associated with having multiple international operations;
- Longer payment cycles and difficulties in enforcing contracts and collecting accounts receivable;
- The need to localize our products and licensing programs for international customers;

As we continue to expand our business globally, our success will depend, to a large extent, on our ability to anticipate and effectively manage these and other risks associated with our international operations. Any of these risks could harm our international operations and reduce our international sales, adversely affecting our business, results of operations, financial condition and growth prospects.

Errors or defects in our software solutions could inevitably arise and would harm our profitability and our reputation with customers, and could even give rise to liability claims against us.

The quality of our solutions, including new, modified or enhanced versions thereof, is critical to our success. Since our software solutions are complex, they may contain errors that cannot be detected at any point in their testing phase. While we continually test our solutions for errors or defects and work with customers to identify and correct them, errors in our technology may be found in the future. Testing for errors or defects is complicated because it is difficult to simulate the breadth of operating systems, user applications and computing environments that our customers use, and our solutions themselves are increasingly complex. Errors or defects in our technology have resulted in terminated work orders and could result in delayed or lost revenue, diversion of development resources and increased services, termination of work orders, damage to our brand and warranty and insurance costs in the future. In addition, time-consuming implementations may also increase the number of services personnel we must allocate to each customer, thereby increasing our costs and adversely affecting our business, results of operations and financial condition.

In addition, since our customers rely on our solutions to operate, monitor and improve the performance of their business processes, they are sensitive to potential disruptions that may be caused by the use of, or any defects in, our software. As a result, we may be subject to claims for damages related to software errors in the future. Liability claims could require us to spend significant time and money in litigation or to pay significant damages. Regardless of whether we prevail, diversion of key employees' time and attention from our business, the incurrence of substantial expenses and potential damage to our reputation might result. While the terms of our sales contracts typically limit our exposure to potential liability claims and we carry errors and omissions insurance against such claims, there can be no assurance that such insurance will continue to be available on acceptable terms, if at all, or that such insurance will provide us with adequate protection against any such claims. A significant liability claim against us could have a material adverse effect on our business, results of operations and financial position.

Failure to meet customer expectations with respect to the implementation and use of our solutions or damage caused by our solutions to our customers' information systems could result in negative publicity, reduced sales and diversion of resources, may cause the cancellation of our contracts and may subject us to liability claims, all of which would harm our business, results of operations, financial condition and growth prospects.

Some of the products and software services that we provide involve key aspects of customers' information systems and may be considered critical to the operations of our clients' businesses. As a result, our customers have a greater sensitivity to failures in these systems than do customers of other software products generally. In addition, our exposure to legal liability may be increased in the case of contracts in which we become more involved in our clients' operations. If a customer's system fails during or following the provision of products or services by us, or if we fail to provide customers with proper support for our software products or do so in an untimely manner, we are exposed to the risks of cancellation of our contract with the customer and a legal claim for substantial damages being filed against us, regardless of whether or not we are responsible for the failure. While we typically strive to include provisions designed to limit our exposure to legal claims relating to our services and the solutions we develop, these provisions may not adequately protect us or may not be enforceable in all cases. The general liability insurance coverage that we maintain, including coverage for errors and omissions, is subject to important exclusions and limitations. We cannot be certain that this coverage will continue to be available on reasonable terms or will be available in sufficient amounts to cover one or more large claims, or that the insurer will not disclaim coverage as to any future claim. A successful assertion of one or more large claims against us that exceeds our available insurance coverage or changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could adversely affect our profitability.

In addition, we generally provide our customers with upfront estimates regarding the duration, budget and costs associated with the implementation of our products. Implementation of some of our solutions is complex and meeting the anticipated duration, budget and costs often depends on factors relating to our customers or their other vendors. We may not meet the upfront estimates and expectations of our customers for the implementation of products as a result of our products' capabilities or service engagements by us, our system integrator partners or our customers' IT employees. Consequently, if we fail to meet upfront estimates and the expectations of our customers for the implementation of our products, our reputation could be harmed, which could adversely affect our ability to attract new customers and sell additional products and services to existing customers.

Please see the risk factor titled "If our customers terminate contracted projects..." above for two examples of modifications or cancellations of projects by customers of Sapiens within the last two years that have had an adverse impact on Sapiens' results of operations.

Incorrect or improper use of our products or our failure to properly train customers on how to implement or utilize our products could result in customer dissatisfaction and negatively affect our business, results of operations, financial condition and growth prospects.

Certain of our software solutions are complex and are deployed in a wide variety of network environments. The proper use of our solutions requires training of the customer. If our solutions are not used correctly or as intended, inadequate performance may result. Additionally, our customers or third-party partners may incorrectly implement or use our solutions. Our solutions may also be intentionally misused or abused by customers or their employees or third parties who are able to access or use our solutions. Similarly, our solutions are sometimes installed or maintained by customers or third parties with smaller or less qualified IT departments, potentially resulting in sub-optimal installation and, consequently, performance that is less than the level anticipated by the customer. Because our customers rely on our software, services and maintenance support to manage a wide range of operations, the incorrect or improper use of our solutions, our failure to properly train customers on how to efficiently and effectively use our solutions, or our failure to properly provide implementation or maintenance services to our customers has resulted in terminated work orders and may result in termination of work orders, negative publicity or legal claims against us in the future. Also, as we continue to expand our customer base, any failure by us to properly provide these services will likely result in lost opportunities for follow-on sales of our software and services.

In addition, if there is substantial turnover of customer personnel responsible for implementation and use of our products, or if customer personnel are not well trained in the use of our products, customers may defer the deployment of our products, may deploy them in a more limited manner than originally anticipated or may not deploy them at all. Further, if there is substantial turnover of the customer personnel responsible for implementation and use of our products, our ability to make additional sales may be substantially limited.

If existing customers do not make subsequent purchases from us and continue using our solutions and services or if our relationships with our largest customers are impaired, our revenue and profitability could be negatively affected

The loss of any of our major customers or a decrease or delay in orders or anticipated spending by such customers could reduce our revenues and profitability, due to our reliance on such customers. Our customers could also engage in business combinations, which could increase their size, reduce their demand for our products and solutions as they recognize synergies or rationalize assets, and increase or decrease the portion of our total sales concentration with respect to any single customer.

For example, five customers of Sapiens (together with its subsidiaries) accounted for, in the aggregate, 22% and 20.7% of Sapiens' consolidated revenues in 2017 and 2018, respectively (or 4.4% and 4.0% of our consolidated revenues in those respective years). In addition, Magic Software's (together with its subsidiaries) five largest customers accounted for, in the aggregate, 27% of its revenues in each of 2017 and 2018 (or 5.1% of our consolidated revenues in each of those years). One of Magic's five largest customers accounted for 13% of its revenues in each of 2017 and 2018 (or 2.5% of our consolidated revenues in each of those years). One significant customer of TSG accounted for approximately 40% and 37% of its revenues in 2017 and 2018, respectively (or 2.0% and 1.7% of our consolidated revenues in those respective years). One significant customer of InSync accounted for approximately 28% and 25.3% of its revenues in 2017 and 2018, respectively (or 0.7% and 0.6% of our consolidated revenues in those respective years).

There can be no assurance that the existing customers of our significant subsidiaries and affiliates will enter into new project contracts with us or that they will continue using our technologies and IT services. A significant decline in our revenue stream from existing customers would have an adverse effect on our operating results.

There may be consolidation in the markets and industries in which we operate, which could reduce the use of our products and services and adversely affect our revenues.

Mergers or consolidations among our customers could reduce the number of our customers and potential customers. This could adversely affect our revenues even if these events do not reduce the aggregate number of customers or the activities of the consolidated entities. If our customers merge with or are acquired by other entities that are not our customers, or that use fewer of our products and services, they may discontinue or reduce their use of our products and services. Any of these developments could materially and adversely affect our results of operations and cash flows. Furthermore, with respect to TSG in particular, as the number of companies in the defense industry has decreased in recent years, the market share of some prime contractors has increased. Some of these companies are vertically integrated with in-house capabilities similar to TSG's in certain areas. Thus, at times TSG could be seeking business from certain of these prime contractors, while at other times it could be in competition with some of them. Failure to maintain good business relations with these major contractors could negatively impact TSG's business, which focuses on the defense market.

If we are unable to retain effective control over our subsidiaries, we would cease to consolidate them and our operating results may fluctuate significantly.

Except for our joint control in TSG, we currently have effective control under IFRS 10 in each of our other investees, despite the lack of absolute majority of voting power in each of Magic Software, Matrix and Sapiens. As a result of our effective control in these investees as of December 31, 2018, we consolidated their financial results with ours throughout the period covered by the financial statements included in Item 18 of this annual report. Prior to our transition to reporting under IFRS, we would consolidate investees in which we held an equity interest only if we held a controlling interest in those companies. Under IFRS 10, we may consolidate entities in which we have effective control. For further information, please see Note 2(3) to our consolidated financial statements included in Item 18 of this annual report.

Although it is our board of directors' strategy to maintain effective control over our directly held investees, if we are unable to continue maintaining effective control over one or more of our public subsidiaries as a result of equity issuances to third parties that are unaffiliated with us or otherwise, we would cease to consolidate the operating results of those subsidiaries, based on relevant accounting guidelines. This, in turn, could result in significant fluctuations of our consolidated operating results.

Sapiens' deed of trust related to its Series B Debentures contains certain affirmative covenants and restrictive provisions that, if breached, could result in an increase in the interest rate and, potentially, an acceleration of Sapiens' obligation to repay those debentures, which it may be unable to effect.

In the deed of trust that our subsidiary Sapiens has entered into with the trustee for the holders of its Series B Debentures, or the debentures, which it offered and sold in an Israeli public offering and Israeli private placement in September 2017, Sapiens has undertaken to maintain a number of conditions and limitations on the manner in which it can operate its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on its assets, or undergo an asset sale or other change that results in a fundamental change in its operations. The deed of trust also requires Sapiens to comply with certain financial covenants, including maintenance of a minimum shareholders' equity level and a maximum ratio of financial indebtedness to shareholders' equity, at levels that are customary for companies of comparable size. These limitations and covenants may force Sapiens to pursue less than optimal business strategies or forego business arrangements that could otherwise be financially advantageous to Sapiens and, by extension, to us and our shareholders. The deed of trust furthermore provides for an upwards adjustment in the interest rate payable under the debentures in the event that Sapiens' debentures' rating is downgraded below a certain level. A breach of the financial covenants for more than two successive quarters or a substantial downgrade in the rating of the debentures (below BBB-) would constitute an event of default that could result in the acceleration of Sapiens' obligation to repay the debentures, of which there is NIS 280 million (approximately US \$79.14 million) principal amount outstanding, which accelerated repayment may be difficult for Sapiens to effect.

Risks Related to our Intellectual Property

Assertions by third parties of infringement or other violation by us of their intellectual property rights could result in significant costs and substantially harm our business and results of operations.

The software industry is characterized by the existence of a large number of patents and frequent claims and related litigation regarding patents and other intellectual property rights. In particular, leading companies in the software industry own large numbers of patents, copyrights, trademarks and trade secrets, which they may use to assert claims against us. From time to time, third parties, including certain of these leading companies, may assert patent, copyright, trademark or other intellectual property claims against us, our customers and partners, and those from whom we license technology and intellectual property.

Although we believe that our products and services do not infringe upon the intellectual property rights of third parties, we cannot assure you that third parties will not assert infringement or misappropriation claims against us with respect to current or future products or services, or that any such assertions will not require us to enter into royalty arrangements or result in costly litigation, or result in us being unable to use certain intellectual property. We cannot assure you that we are not infringing or otherwise violating any third party intellectual property rights. Infringement assertions from third parties may involve patent holding companies or other patent owners who have no relevant product revenues, and therefore our own issued and pending patents may provide little or no deterrence to these patent owners in bringing intellectual property rights claims against us.

Any intellectual property infringement or misappropriation claim or assertion against us, our customers or partners, and those from whom we license technology and intellectual property could have a material adverse effect on our business, financial condition, reputation and competitive position regardless of the validity or outcome. If we are forced to defend against any infringement or misappropriation claims, whether they are with or without merit, are settled out of court, or are determined in our favor, we may be required to expend significant time and financial resources on the defense of such claims. Furthermore, an adverse outcome of a dispute may require us to pay damages, potentially including treble damages and attorneys' fees, if we are found to have willfully infringed on a party's intellectual property; cease making, licensing or using our products or services that are alleged to infringe or misappropriate the intellectual property of others; expend additional development resources to redesign our products or services; enter into potentially unfavorable royalty or license agreements in order to obtain the right to use necessary technologies or works; and to indemnify our partners, customers, and other third parties. Royalty or licensing agreements, if required or desirable, may be unavailable on terms acceptable to us, or at all, and may require significant royalty payments and other expenditures. Any of these events could seriously harm our business, results of operations and financial condition. In addition, any lawsuits regarding intellectual property rights, regardless of their success, could be expensive to resolve and divert the time and attention of our management and technical personnel.

Although we apply measures to protect our intellectual property rights and our source code, there can be no assurance that the measures that we employ to do so will be successful.

Our success and ability to compete depend in large part upon our ability to protect our proprietary technology. In accordance with industry practice, since we generally do not maintain registered patents on our software solutions technologies, we rely on a combination of trade secret and copyright and intellectual property laws and confidentiality, non-disclosure and assignment-of-inventions agreements to protect our proprietary technology. We believe that due to the dynamic nature of the computer and software industries, copyright protection is less significant than factors such as the knowledge and experience of our management and personnel, the frequency of product enhancements and the timeliness and quality of our support services. We seek to protect the source code of our products as trade secret information and as unpublished copyright works. We also rely on security and copy protection features in our proprietary software. We distribute our products under software license agreements that grant customers a personal, non-transferable license to use our products and contain terms and conditions prohibiting the unauthorized reproduction or transfer of our products. In addition, while we attempt to protect trade secrets and other proprietary information through non-disclosure agreements with employees, consultants and distributors, not all of our employees have signed invention assignment agreements. Although we intend to protect our rights vigorously, there can be no assurance that these measures will be successful. Our failure to protect our rights, or the improper use of our products by others without licensing them from us could have a material adverse effect on our results of operations and financial condition.

We and our customers rely on technology and intellectual property of third parties, the loss of which could limit the functionality of our products and disrupt our business.

We use technology and intellectual property licensed from unaffiliated third parties in certain of our products, and we may license additional third-party technology and intellectual property in the future. Any errors or defects in this third-party technology and intellectual property could result in errors that could harm our brand and business. In addition, licensed technology and intellectual property may not continue to be available on commercially reasonable terms, or at all. The loss of the right to license and distribute this third party technology could limit the functionality of our products and might require us to redesign our products.

Further, although we believe that there are currently adequate replacements for the third-party technology and intellectual property we presently use and distribute, the loss of our right to use any of this technology and intellectual property could result in delays in producing or delivering affected products until equivalent technology or intellectual property is identified, licensed or otherwise procured, and integrated. Our business would be disrupted if any technology and intellectual property we license from others or functional equivalents of this software were either no longer available to us or no longer offered to us on commercially reasonable terms. In either case, we would be required either to attempt to redesign our products to function with technology and intellectual property available from other parties or to develop these components ourselves, which would result in increased costs and could result in delays in product sales and the release of new product offerings. Alternatively, we might be forced to limit the features available in affected products. Any of these results could harm our business and impact our results of operations.

Some of our software services and technologies may use “open source” software, which may restrict how we use or distribute our services or require that we release the source code of certain products subject to those licenses.

Some of our services and technologies may incorporate software licensed under so-called “open source” licenses, including, but not limited to, the GNU General Public License and the GNU Lesser General Public License. In addition to risks related to license requirements, usage of open source software can lead to greater risks than use of third-party commercial software, as open source licensors generally do not provide warranties or controls on origin of the software. Additionally, open source licenses typically require that source code subject to the license be made available to the public and that any modifications or derivative works to open source software continue to be licensed under open source licenses. These open source licenses typically mandate that proprietary software, when combined in specific ways with open source software, become subject to the open source license. If we combine our proprietary software with open source software, we could be required to release the source code of our proprietary software.

We take steps to ensure that our proprietary software is not combined with, and does not incorporate, open source software in ways that would require our proprietary software to be subject to an open source license. However, few courts have interpreted open source licenses, and the manner in which these licenses may be interpreted and enforced is therefore subject to some uncertainty. Additionally, we rely on multiple software programmers to design our proprietary technologies, and although we take steps to prevent our programmers from including open source software in the technologies and software code that they design, write and modify, we do not exercise complete control over the development efforts of our programmers and we cannot be certain that our programmers have not incorporated open source software into our proprietary products and technologies or that they will not do so in the future. In the event that portions of our proprietary technology are determined to be subject to an open source license, we could be required to publicly release the affected portions of our source code, re-engineer all or a portion of our technologies, or otherwise be limited in the licensing of our technologies, each of which could reduce or eliminate the value of our services and technologies and materially and adversely affect our business, results of operations and prospects.

We could be required to provide the source code of our products to our customers.

Some of our customers have the right to require the source code of our products to be deposited into a source code escrow. Under certain circumstances, our source code could be released to our customers. The conditions triggering the release of our source code vary by customer. A release of our source code would give our customers access to our trade secrets and other proprietary and confidential information, which could harm our business, results of operations and financial condition. A few of our customers have the right to use the source code of some of our products based on the license agreements signed with such clients (mostly with respect to older versions of our solutions). Although such use is limited to specific matters and cases, these clients are exposed to some of our trade secrets and other proprietary and confidential information, which could harm us.

Significant disruptions of our information technology systems or breaches of our data security could adversely affect our business.

A significant invasion, interruption, destruction or breakdown of our information technology, or IT, systems and/or infrastructure by persons with authorized or unauthorized access could negatively impact our business and operations. We could also experience business interruption, information theft and/or reputational damage from cyber-attacks, which may compromise our systems and lead to data leakage internally. Both data that has been inputted into our main IT platform, which covers records of transactions, financial data and other data reflected in our results of operations, as well as data related to our proprietary rights (such as research and development, and other intellectual property-related data), are subject to material cyber security risks. Our IT systems have been, and are expected to continue to be, the target of malware, ransomware and other cyber-attacks. To date, we are not aware that we have experienced any loss of, or disruption to, material information as a result of any such malware or cyber-attack.

Maintaining the security of our products, computers and networks is a critical issue for us and our customers. Security researchers, criminal hackers and other third parties regularly develop new techniques to penetrate computer and network security measures. In addition, hackers also develop and deploy viruses, worms and other malicious software programs, some of which may be specifically designed to attack our products, systems, computers or networks. Additionally, outside parties may attempt to fraudulently induce our employees or users of our products to disclose sensitive information in order to gain access to our data or our customers' data. These potential breaches of our security measures and the accidental loss, inadvertent disclosure or unauthorized dissemination of proprietary information or sensitive, personal or confidential data about us, our employees or our customers, including the potential loss or disclosure of such information or data as a result of hacking, fraud, trickery or other forms of deception, could expose us, our employees, our customers or the individuals affected to a risk of loss or misuse of this information, result in litigation and potential liability or fines for us, damage our brand and reputation or otherwise harm our business. In addition, a failure to protect the privacy of customer and employee confidential data against breaches of network or IT security could result in damage to our reputation.

We have invested in advanced detection, prevention and proactive systems and processes to reduce these risks. Based on independent audits, we believe that our level of protection is in keeping with the industry standards of peer technology companies. We also maintain a disaster recovery solution, as a means of assuring that a breach or cyber-attack does not necessarily cause the loss of our information. We furthermore review our protections and remedial measures periodically in order to ensure that they are adequate. To date, we have not been subject to cyber attacks or other cyber incidents which, individually or in the aggregate, resulted in a material impact to our operations or financial condition.

Despite these protective systems and remedial measures, techniques used to obtain unauthorized access are constantly changing, are becoming increasingly more sophisticated and often are not recognized until after an exploitation of information has occurred. We may be unable to anticipate these techniques or implement sufficient preventative measures, and we therefore cannot assure you that our preventative measures will be successful in preventing compromise and/or disruption of our information technology systems and related data. We furthermore cannot be certain that our remedial measures will fully mitigate the adverse financial consequences of any cyber attack or incident.

Risks Related to our Traded Securities

There is limited trading volume for our ADSs and ordinary shares, which reduces liquidity for our shareholders, and may furthermore cause the stock price to be volatile, all of which may lead to losses by investors.

There has historically been limited trading volume for our ADSs and ordinary shares, respectively, both on the NASDAQ Global Select Market and the TASE, such that trading has still not reached the level that enables shareholders to freely sell their shares in substantial quantities on an ongoing basis and thereby readily achieve liquidity for their investment. As a further result of the limited volume, our ordinary shares have experienced significant market price volatility in the past and may experience significant market price and volume fluctuations in the future, in response to factors such as announcements of developments related to our investee businesses, announcements by competitors of our investees, quarterly fluctuations in our financial results and general conditions in the industry in which we through our investees compete.

The market price of our ordinary shares and ADSs may be volatile and you may not be able to resell your shares at or above the price you paid, or at all.

The stock market in general has experienced during recent years extreme price and volume fluctuations. The market prices of securities of technology companies have been extremely volatile, and have experienced fluctuations that have often been unrelated or disproportionate to the operating performance of those companies. These broad market fluctuations have affected and are expected to continue to affect the market price of our ordinary shares and ADSs.

The high and low closing market price of our ordinary shares traded on the Tel Aviv Stock Exchange, or the TASE, under the symbol "FORTY," and the high and low closing market price of our ADSs traded on the NASDAQ Global Select Market under the symbol "FORTY," during each of the last five years, are summarized in the table below:

Year	NASDAQ		Tel Aviv Stock Exchange*			
	In USDS		In NIS		In USDS	
	High	Low	High	Low	High	Low
2018	44.95	32.57	156.40	117.70	43.65	33.72
2017	44.20	35.52	162.10	128.00	42.07	35.49
2016	42.17	23.55	162.70	93.79	42.18	23.61
2015	35.00	20.52	135.20	82.36	35.31	20.98
2014	33.79	21.02	114.10	83.70	32.83	21.52

* The U.S. dollar price of our ordinary shares on the Tel Aviv Stock Exchange was determined by dividing the closing price of an ordinary share in NIS on the relevant date by the representative exchange rate of the NIS against the U.S. dollar as reported by the Bank of Israel on the same date.

The market price of our ordinary shares and ADSs may fluctuate substantially due to a variety of factors, including:

- any actual or anticipated fluctuations in our or our competitors' quarterly revenues and operating results;
- industry trends and changes;
- changes in expectations as to our future financial performance, including financial estimates by securities analysts and investors;
- public announcements concerning us or our competitors;
- results of integrating investments and acquisitions;
- the introduction or market acceptance of new service offerings by us or our competitors;
- changes in product pricing policies by us or our competitors;
- public announcements concerning distribution of dividends and payment of dividends;
- the public's response to our press releases, our other public announcements and our filings with the Securities and Exchange Commission and the Israeli Securities Authority;
- changes in accounting principles;
- sales of our shares by existing shareholders;
- the loss of any of our key personnel;
- other events or factors in any of the markets in which we operate, including those resulting from war, incidents of terrorism, natural disasters or responses to such events; and
- general trends of the stock markets.

In addition, global and local economic, political, market and industry conditions and military conflicts and in particular, those specifically related to the State of Israel, may affect the market price of our ordinary shares and ADSs.

Significant fluctuations in our annual and quarterly results, which make it difficult for investors to make reliable period-to-period comparisons, may also contribute to volatility in the market price of our ordinary shares and American Depositary Shares.

Our quarterly and annual revenues, gross profit, net income and results of operations have fluctuated significantly in the past, and we expect them to continue to fluctuate significantly in the future. The following events may cause fluctuations:

- general global economic conditions;
- acquisitions and dispositions;
- the size, time and recognition of revenue from significant contracts;
- timing of product releases or enhancements;
- timing of contracts;
- timing of completion of specified milestones and delays in implementation;

- changes in the proportion of service and license revenues;
- price and product competition;
- market acceptance of our new products, applications and services;
- increases in selling and marketing expenses, as well as other operating expenses;
- currency fluctuations; and
- consolidation of our customers.

A substantial portion of our expenses, including most product development and selling and marketing expenses must be incurred in advance of when revenue is generated. If our projected revenue does not meet our expectations, we are likely to experience an even larger shortfall in our operating profit relative to our expectations. The gross margins of our individual subsidiaries vary both among themselves and over time. As a result, changes in the revenue mix from these subsidiaries may affect our quarterly operating results. In addition, we may derive a significant portion of our net income from the sale of our investments or the sale of our proprietary software technology. These events do not occur on a regular basis and their timing is difficult to predict. As a result, we believe that period-to-period comparisons of our historical results of operations are not necessarily meaningful and that you should not rely on them as an indication for future performance. Also, it is possible that our quarterly and annual results of operations may be below the expectations of public market analysts and investors. If this happens, the prices of our ordinary shares and ADSs will likely decrease.

The market prices of our ordinary share and ADSs may be adversely affected if the market prices of our publicly traded investees decrease.

A significant portion of our assets is comprised of equity securities of directly held publicly traded companies. Our publicly traded investees are currently Matrix, Sapiens and Magic Software. The share prices of these publicly traded companies have been extremely volatile, and have been subject to fluctuations due to market conditions and other factors which are often unrelated to operating results and which are beyond our control. Fluctuations in the market price and valuations of our holdings in these companies may affect the market's valuation of the price of our ordinary shares and ADSs and may also thereby impact our results of operations. If the value of our assets decreases significantly as a result of a decrease in the value of our interest in our publicly traded investees, our business, operating results and financial condition may be materially and adversely affected and the market price of our ordinary shares and ADSs may also fall as a result.

Our securities are traded on more than one market and this may result in price variations.

Formula's ordinary shares are traded on the TASE and our ADSs are traded on the NASDAQ Global Select Market. Trading in our ordinary shares and ADSs on these markets takes place in different currencies (dollars on the NASDAQ Global Select Market and NIS on the TASE), and at different times (resulting from different time zones, different weekly trading days and different public holidays in the United States and Israel). The trading prices of our ordinary shares and ADSs on these two markets may differ due to these and other factors (see the risk factor titled "The market price of our ordinary shares and American Depositary Shares may be volatile and you may not be able to resell your shares at or above the price you paid, or at all" above for an example thereof). On the other hand, any decrease in the trading price of our ordinary shares or ADSs, as applicable, on one of these markets could likely affect—and cause a decrease in—the trading price on the other market.

Our largest shareholder, Asseco Poland S.A., can significantly influence the outcome of matters that require shareholder approval.

Asseco Poland S.A., or Asseco, our largest shareholder, currently owns approximately 25.35% of our outstanding share capital (compared to 26.3% as of December 31, 2018) and is furthermore party to a shareholders' agreement with our Chief Executive Officer, under which agreement Asseco has been granted an irrevocable proxy to vote 1,971,973 of our ordinary shares owned by our Chief Executive Officer. As a result, Asseco has effective voting power over an aggregate of 38.25% (compared to 39.7% as of December 31, 2018) of our outstanding ordinary shares (which excludes shares that we have repurchased that lack voting rights and shares subject to restrictions that are voted in proportion to the votes of our other shares). Therefore, Asseco can significantly influence the outcome of those matters requiring shareholder approval, including the election of directors and approval of significant corporate transactions. This voting power may have the effect of delaying or preventing a change in control which may otherwise be favorable to our minority shareholders. In addition, potential conflicts of interest may arise in the event that we or any of our investees enters into any agreements or transactions with affiliates of Asseco. Although Israeli law imposes certain procedures (including the requirement to obtain shareholder approval, which in certain cases includes a "majority of the minority") for approval of certain related party transactions, we cannot assure you that these procedures will eliminate the possible detrimental effects of these conflicts of interest. If certain transactions are not approved in accordance with required procedures under applicable Israeli law, these transactions may be void or voidable.

If we are unable to maintain effective internal control over financial reporting in accordance with Section 404 of the Sarbanes-Oxley Act of 2002, the reliability of our financial statements may be questioned and our share price may suffer.

The Sarbanes-Oxley Act of 2002 imposes certain duties on us and on our executives and directors. To comply with this statute, we are required to document and test our internal control over financial reporting, our management is required to assess and issue a report concerning our internal control over financial reporting and our independent registered public accounting firm must issue an attestation report on our internal control procedures. Our efforts to comply with these requirements have resulted in increased general and administrative expenses and a diversion of management time and attention, and we expect these efforts to require the continued commitment of significant resources. We may identify material weaknesses or significant deficiencies in our assessments of our internal control over financial reporting. Failure to maintain effective internal control over financial reporting could result in investigation or sanctions by regulatory authorities, and could adversely affect our operating results, investor confidence in our reported financial information and the market price of our ordinary shares.

Risks Related to Operations in Israel

Political, economic, and military conditions in Israel could negatively impact our business.

We are incorporated under the laws of, and our headquarters and principal research and development facilities are located in, the State of Israel, and approximately 62% and 60% of our consolidated revenues in 2017 and 2018, respectively, were generated from the Israeli market. As a result, we are directly influenced by the political, economic and military conditions affecting Israel. In addition, several countries still restrict business with Israel and with companies doing business in Israel. These political, economic and military conditions in Israel, and business restrictions, could have a material adverse effect on our business, financial condition, results of operations and future growth.

Conflicts in North Africa and the Middle East, including in Egypt and Syria, which border Israel, have resulted in continued political uncertainty and violence in the region. Efforts to improve Israel's relationship with the Palestinian Authority have failed to result in a permanent solution, and there have been numerous periods of hostility in recent years during which Hamas, a terrorist group that controls the Gaza Strip, has attacked Israel with rockets. In addition, relations between Israel and Iran continue to be seriously strained, especially with regard to Iran's nuclear program. Such instability may affect the economy, could negatively affect business conditions and, therefore, could adversely affect our operations. To date, these matters have not had any material effect on our business and results of operations; however, the regional security situation and worldwide perceptions of it are outside our control and there can be no assurance that these matters will not negatively affect our business, financial condition and results of operations in the future.

Many of our employees (including executive officers) in Israel are obligated to perform military reserve duty, currently consisting of approximately 30 days of service annually (or more for reserves officers or non-officers with certain expertise). Additionally, they are subject to being called to active duty at any time upon the outbreak of hostilities. While we have operated effectively under these requirements, no assessment can be made as to the full impact of such requirements on our business or work force and no prediction can be made as to the effect on us of any expansion of such obligations.

Our business may be materially affected by changes to fiscal and tax policies. Potentially negative or unexpected tax consequences of these policies, or the uncertainty surrounding their potential effects, could adversely affect our results of operations and share price.

As a multinational Group, we are subject to income taxes, withholding taxes and indirect taxes in numerous jurisdictions worldwide. Significant judgment and management attention and resources are required in evaluating our tax positions and our worldwide provision for taxes. In the ordinary course of business, there are many activities and transactions for which the ultimate tax determination is uncertain. In addition, our tax obligations and effective tax rates could be adversely affected by changes in the relevant tax, accounting, and other laws, regulations, principles and interpretations. This may include recognizing tax losses or lower than anticipated earnings in jurisdictions where we have lower statutory rates and higher than anticipated earnings in jurisdictions where we have higher statutory rates, changes in foreign currency exchange rates, or changes in the valuation of our deferred tax assets and liabilities.

We may be audited in various jurisdictions, and such jurisdictions may assess additional taxes against us. If we experience unfavorable results from one or more such tax audits, there could be an adverse effect on our tax rate and therefore on our net income. Although we believe our tax estimates are reasonable, the final determination of any tax audits or litigation could be materially different from our historical tax provisions and accruals, which could have a material adverse effect on our operating results or cash flows in the period or periods for which a determination is made. Additionally, we and our subsidiaries are subject to transfer pricing rules and regulations, including those relating to the flow of funds between each of us and our respective affiliates, which are designed to ensure that appropriate levels of income are reported in each jurisdiction in which we operate.

The U.S. Tax Act introduced significant changes to the U.S. Internal Revenue Code. The U.S. Tax Act requires complex computations to be performed that were not previously required under U.S. tax law, significant judgments to be made in interpretation of its provisions, significant estimates in calculations, and the preparation and analysis of information not previously relevant or regularly produced. The primary impact of the Tax Act on us was a reduction of our effective tax rate in the U.S. The expected impact of the U.S. Tax Act may differ from the tax expense that we actually incur, due to, among other things, possible changes in the interpretations and assumptions made by us as a result of additional information, additional guidance that may be issued by the U.S. Department of Treasury, the IRS or other standard-setting bodies. There may be additional tax effects of the U.S. Tax Act that may impact our future financial statements once additional laws, regulations, and/or guidance are enacted or issued (as applicable), which we will account for at that time.

The base erosion and profit shifting, or BEPS, project undertaken by the Organization for Economic Cooperation and Development, or OECD, may have adverse consequences for our tax liabilities. The BEPS project contemplates changes to numerous international tax principles, as well as national tax incentives, and these changes, when adopted by individual countries, could adversely affect our provision for income taxes. Countries have only recently begun to translate the BEPS recommendations into specific national tax laws, and it remains difficult to predict the magnitude of the effect of such new rules on our financial results.

The tax benefits that will be available to certain of our Israeli subsidiaries and our Israeli affiliate will require us to continue to meet various conditions and may be terminated or reduced in the future, which could increase our costs and taxes.

Some of our Israeli subsidiaries have been granted "Approved Enterprise", or AE, status under the Israeli Law for the Encouragement of Capital Investments, 5719-1959, or the Investment Law, which provide certain benefits, including tax exemptions and reduced tax rates. We were also eligible for certain tax benefits provided to Benefited Enterprises, or BEs, under the Investment Law. Income not eligible for AE benefits is taxed at the regular corporate tax rate (24% for 2017 and 23% for 2018 and thereafter).

In recent years, certain of our subsidiaries that have been granted such benefit tax status have notified the Israel Tax Authority that they apply the new tax Preferred Enterprise, or PFE, regime under the Investment Law instead of our AE and BE. Accordingly, these subsidiaries are eligible for certain tax benefits provided to PFEs under the Investment Law. Beginning in 2017, part of our taxable income in Israel is eligible for benefits under Amendment 73 to the Investment Law (as described in Item 5 below). If we do not meet the conditions stipulated in the Investment Law and the regulations promulgated thereunder, as amended, for the Preferred Tax Enterprise, or PTE, any of the associated tax benefits may be cancelled and we would be required to repay the amount of such benefits, in whole or in part, including interest and CPI linkage (or other monetary penalties). Further, in the future these tax benefits may be reduced or discontinued. If these tax benefits are reduced, cancelled or discontinued, our Israeli taxable income would be subject to regular Israeli corporate tax rates, which would harm our financial condition and results of operation. Additionally, if we increase our activities outside of Israel through acquisitions, for example, our expanded activities might not be eligible for inclusion in future Israeli tax benefit programs.

In the event of distribution of dividends from said tax-exempt income, the amount distributed will be subject to corporate tax at the rate that would have otherwise been applicable on the AE/BE's income.

Fluctuations in foreign currency values may affect our business and results of operations.

Due to our extensive operations and sales in Israel, most of our revenues and expenses from our IT services are denominated in NIS. For financial reporting purposes, we translate all non-U.S. dollar denominated transactions into dollars in accordance with IFRS. Therefore, we are exposed to the risk that a devaluation of the NIS relative to the dollar will reduce our revenue growth rate in dollar terms. On the other hand, a significant portion of our revenues from proprietary software products and related services is currently denominated in other currencies, particularly the Euro, Japanese Yen, British Pound, India Rupee, or INR, and Polish Zloty, or PLN, while a substantial portion of our expenses relating to the proprietary software products and related services, principally salaries and related personnel expenses, is denominated in NIS. As a result, the depreciation of the Euro, Japanese Yen, British Pound, INR and PLN relative to the U.S. dollar reduces our dollar recorded revenues from sales of our proprietary software products and related services that are denominated in those currencies and thereby harms our results of operations. In addition, the appreciation of the NIS relative to the dollar increases the dollar recorded value of expenses that we incur in NIS in respect of such proprietary software products sales, and, therefore, could adversely affect our results of operations and harm our competitive position in the markets. The appreciation of the NIS in relation to the dollar amounted to 9.8% in 2017, whereas in 2018, the dollar appreciated by 8.1% relative to the NIS (in each case, based on the change in the exchange rate reported by the Bank of Israel from the start to the conclusion of that year). Inflation in Israel further increases the dollar cost of our NIS-based operating expenses and adversely impact the profits that we realize from our proprietary software products sales. There was minimal inflation during the years ended December 31, 2017 and 2018, as the NIS was subject to inflation of 0.24% and 0.88% during those respective years (in each case, relative to the previous year).

In certain locations, we have engaged and may continue in the future to engage in currency-hedging transactions intended to reduce the effect of fluctuations in foreign currency exchange rates on our financial position and results of operations. However, there can be no assurance that any such hedging transactions will materially reduce the effect of fluctuation in foreign currency exchange rates on such results. In addition, if for any reason exchange or price controls or other restrictions on the conversion of foreign currencies were imposed, our financial position and results of operations could be adversely affected. For additional information relating to the exchange rates between different relevant currencies, see “Item 5. Operating and Financial Review and Prospects—Overview—Our Functional and Reporting Currency.”

It may be difficult to serve process and enforce judgments against our directors and officers in the United States or in Israel.

We are organized under the laws of the State of Israel. All of our executive officers and directors are nonresidents of the United States, and a substantial portion of our assets and the assets of these persons are located outside of the United States. Therefore, it may be difficult to:

- effect service of process within the United States on us or any of our executive officers or directors;
- enforce court judgments obtained in the United States including those predicated upon the civil liability provisions of the United States federal securities laws, against us or against any of our executive officers or directors, in the United States or Israel; and
- bring an original action in an Israeli court against us or against any of our executive officers or directors to enforce liabilities based upon the United States federal securities laws.

Israeli courts may refuse to hear a claim based on an alleged violation of U.S. securities laws reasoning that Israel is not the most appropriate forum in which to bring such a claim. In addition, even if an Israeli court agrees to hear a claim, it may determine that Israeli law and not U.S. law is applicable to the claim. If U.S. law is found to be applicable, the content of applicable U.S. law must be proven as a fact by expert witnesses, which can be a time consuming and costly process. Certain matters of procedure will also be governed by Israeli law. There is little binding case law in Israel that addresses the matters described above. As a result of the difficulty associated with enforcing a judgment against us in Israel, an investor may not be able to collect any damages awarded by either a U.S. or foreign court.

Provisions of Israeli law may delay, prevent or make difficult an acquisition of us, which could prevent a change of control and therefore depress the price of our shares.

The Israeli Companies Law, 5759-1999, or the Companies Law, regulates mergers and requires that tender offers for acquisitions of shares above specified thresholds be approved via special shareholder approvals. The Companies Law furthermore requires shareholder approvals for transactions involving directors, officers or significant shareholders and regulates other matters that may be relevant to these types of transactions. Furthermore, Israeli tax considerations may make potential transactions unappealing to us or to some of our shareholders. These provisions of Israeli corporate and tax law may have the effect of delaying, preventing or complicating a merger with, or other acquisition of, us. This could cause our ordinary shares to trade at prices below the price for which third parties might be willing to pay to gain control of us. Third parties who are otherwise willing to pay a premium over prevailing market prices to gain control of us may be unable or unwilling to do so because of these provisions of Israeli law. Asseco’s control of a significant percentage of our outstanding ordinary shares may also discourage potential acquirers from paying a premium to our shareholders pursuant to a change of control transaction. Please see the risk factor above titled “Our largest shareholder, Asseco Poland S.A., can significantly influence the outcome of matters that require shareholder approval.”

Your rights and responsibilities as a shareholder will be governed by Israeli law and differ in some respects from the rights and responsibilities of shareholders under U.S. law.

We are incorporated under Israeli law. The rights and responsibilities of holders of our ordinary shares are governed by our memorandum of association, amended and restated articles of association, which we sometimes refer to as our articles, and Israeli law. These rights and responsibilities differ in some respects from the rights and responsibilities of shareholders in typical U.S. corporations. In particular, a shareholder of an Israeli company has a duty to act in good faith in exercising the rights thereof and fulfilling the obligations thereof toward the company and other shareholders and to refrain from abusing the power thereof in the company, including, among other things, in voting at the general meeting of shareholders on certain matters. Israeli law provides that these duties are applicable in shareholder votes at the general meeting with respect to, among other things, amendments to a company’s articles of association, increases in a company’s authorized share capital, mergers and acquisitions and transactions involving interests of officers, directors or other interested parties which require the shareholders’ approval. In addition, a controlling shareholder of an Israeli company or a shareholder who knows that he or she possesses the power to determine the outcome of a vote at a meeting of our shareholders, or who has, by virtue of the company’s articles of association, the power to appoint or prevent the appointment of an office holder in the company, or any other power with respect to the company, has a duty of fairness toward the company. The Companies Law does not establish criteria for determining whether or not a shareholder has acted in good faith.

We may have difficulty protecting our interests as a shareholder of Sapiens, which is now a Cayman Islands company.

Following the completion of the migration of its legal jurisdiction to the Cayman Islands in August 2018, Sapiens' corporate affairs are governed by its memorandum of association, or the Memorandum, its articles of association, or the Articles, the Companies Law (2016 Revision) of the Cayman Islands, or the Cayman Companies Law, and the common law of the Cayman Islands. Our rights as a shareholder of Sapiens are not as clearly established under statutes or judicial precedent in the Cayman Islands as in jurisdictions in the United States. Therefore, we may have more difficulty in protecting our interests than would shareholders of a corporation incorporated in a jurisdiction in the United States, due to the comparatively less developed nature of Cayman Islands law in this area.

As part of Sapiens' completion of the migration, it has received (i) a ruling that the migration will not constitute a taxable event to its shareholders under Israeli tax law (being the jurisdiction of our residency for tax purposes) and (ii) approval that the migration will not constitute a taxable event for its shareholders under Curacao tax law. Copies of Sapiens' Memorandum and Articles, which serve as exhibits to its 2018 annual report, were annexed as Appendix A to the proxy statement for Sapiens' 2017 annual general meeting of shareholders, which was appended as Exhibit 99.1 to Sapiens' Report of Foreign Private Issuer on Form 6-K furnished to the SEC on October 26, 2017. A table comparing certain Curacao law provisions to Cayman Islands law provisions was annexed as Appendix B to that same proxy statement.

As a foreign private issuer whose ADSs are listed on the NASDAQ Global Select Market, we may follow certain home country corporate governance practices instead of certain NASDAQ requirements.

As a foreign private issuer whose ADSs are listed on the NASDAQ Global Select Market, we are permitted to follow certain home country corporate governance practices instead of certain requirements of the Listing Rules of the NASDAQ Stock Market. A foreign private issuer that elects to follow a home country practice instead of such requirements must submit to NASDAQ in advance a written statement from independent counsel in such issuer's home country certifying that the issuer's practices are not prohibited by the home country's laws. In addition, a foreign private issuer must disclose in its annual reports filed with the SEC or on its website, each such requirement that it does not follow and describe the home country practice followed by the issuer in lieu of any such requirement. In keeping with these leniencies, we have elected to follow home country practice with regard to, among other things, composition of our board of directors, director nomination procedure, compensation of officers, quorum at shareholders' meetings and timing of our annual shareholders' meetings. We have furthermore elected to follow our home country law, in lieu of those rules of the NASDAQ Stock Market that require that we obtain shareholder approval for certain dilutive events, such as for the establishment or amendment of certain equity based compensation plans, an issuance that will result in a change of control of the company, certain transactions other than a public offering involving issuances of a 20% or more interest in the company and certain acquisitions of the stock or assets of another company. Accordingly, our shareholders and ADS holders may not be afforded the same protection as provided under NASDAQ's corporate governance rules.

Our U.S. shareholders may suffer adverse tax consequences if we are classified as a passive foreign investment company or as a "controlled foreign corporation".

Generally, if for any taxable year 75% or more of our gross income is passive income, or at least 50% of the average quarterly value of our assets (which may be measured in part by the market value of our ordinary shares, which is subject to change) are held for the production of, or produce, passive income, we would be characterized as a passive foreign investment company, or PFIC, for U.S. federal income tax purposes under the Code. Based on our gross income and gross assets, and the nature of our business, we believe that we were not classified as a PFIC for the taxable year ended December 31, 2018. Because PFIC status is determined annually based on our income, assets and activities for the entire taxable year, it is not possible to determine whether we will be characterized as a PFIC for the taxable year ending December 31, 2019, or for any subsequent year, until we finalize our financial statements for that year. Furthermore, because the value of our gross assets is likely to be determined in large part by reference to our market capitalization, a decline in the value of our ordinary shares may result in our becoming a PFIC. Accordingly, there can be no assurance that we will not be considered a PFIC for any taxable year. Our characterization as a PFIC could result in material adverse tax consequences for you if you are a U.S. investor, including having gains realized on the sale of our ordinary shares treated as ordinary income, rather than a capital gain, the loss of the preferential rate applicable to dividends received on our ordinary shares by individuals who are U.S. holders, and having interest charges apply to distributions by us and the proceeds of share sales. Certain elections exist that may alleviate some of the adverse consequences of PFIC status and would result in an alternative treatment (such as mark-to-market treatment) of our ordinary shares. Prospective U.S. investors should consult their own tax advisers regarding the potential application of the PFIC rules to them. Prospective U.S. investors should refer to "Item 10.E. Taxation—U.S. Federal Income Tax Considerations" for discussion of additional U.S. income tax considerations applicable to them based on our treatment as a PFIC.

Certain U.S. holders of our ordinary shares may suffer adverse tax consequences if we or any of our non-U.S. subsidiaries are characterized as a "controlled foreign corporation", or a CFC, under Section 957(a) of the Code. A non-U.S. corporation is considered a CFC if more than fifty percent of the voting power or the total value of the shares is owned, or is considered to be owned, by U.S. shareholders who each own shares representing ten percent or more of the voting or total value of the shares of such non-U.S. corporation, who refer to as 10% U.S. Shareholders.

Generally, 10% U.S. Shareholders of a CFC are currently required to include in their gross income their pro-rata share of the CFC's "Subpart F income", a portion of the CFC's earnings, to the extent the CFC holds certain U.S. property, and certain other new items under H.R. 1, originally known as the 2017 Tax Cuts and Jobs Act, or the TCJA. Such 10% U.S. Shareholders are subject to current U.S. federal income tax with respect to such items, even if the CFC has not made an actual distribution to such shareholders. "Subpart F income" includes, among other things, certain passive income (such as income from dividends, interests, royalties, rents and annuities or gain from the sale of property that produces such types of income) and certain sales and services income arising in connection with transactions between the CFC and a person related to the CFC.

Certain changes to the CFC constructive ownership rules introduced by the TCJA may cause one or more of our non-U.S. subsidiaries to be treated as CFCs and may also impact our CFC status. This may result in negative U.S. federal income tax consequences for 10% U.S. Shareholders of our ordinary shares.

The CFC rules are complex and therefore no assurances can be given that we are not or will not become a CFC. Certain changes to the CFC constructive ownership rules introduced by recent U.S. tax legislation could, under certain circumstances, cause us to be classified as a CFC. Current or prospective 10% U.S. Shareholders should consult their tax advisors regarding the U.S. tax consequences of acquiring, owning, or disposing our ordinary shares and the impact of the TCJA, especially the changes to the rules relating to CFCs.

ITEM 4. INFORMATION ON THE COMPANY

A. History and Development of the Company

Both our legal name and our commercial name is Formula Systems (1985) Ltd. We were incorporated in Israel on April 2, 1985. We maintain our principal executive offices at 5 Haplada Street, Or Yehuda 6021805, Israel and our telephone number is 011-972-3-5389487. Our agent in the United States is Corporation Service Company and its address is 2711 Centerville Road, Suite 400, Wilmington, DE 19808. In 1991, we completed the initial public offering of our ordinary shares on the TASE. In October 1997, we completed the listing of our ADSs on the NASDAQ Global Market. Since January 3, 2011, our ADSs have been listed on the NASDAQ Global Select Market.

Since our inception, we have acquired effective controlling interests, and have invested, in companies which are engaged in the IT solutions and services business. We, together with our investees, are known as the Formula Group.

In November 2010, Emblaze Ltd., our former controlling shareholder, sold its controlling stake in us to Asseco Poland SA, or Asseco, a Polish IT company listed on the Warsaw Stock Exchange. Asseco currently has voting power over an aggregate of 38.25% of our outstanding ordinary shares (which includes 1,971,973 shares held by our Chief Executive Officer for which it has been granted an irrevocable proxy to vote under a shareholders' agreement by and between Asseco and our Chief Executive Officer, and excludes shares that we have repurchased that lack voting rights and shares subject to restrictions that are voted in proportion to the votes of our other shares). Please see "Item 7. Major Shareholders and Related Party Transactions—A. Major Shareholders—Recent Significant Changes in Holdings of Major Shareholders" for more details concerning Asseco's holdings in our company.

We have adopted a strategy of seeking to create positive economic impact and long-term value for our investors and the companies we invest in. We believe that this strategy provides us with capital to support the growth of our interest in our remaining subsidiaries, as well as provide us the opportunity to pursue new acquisitions of, and investments in, other businesses, particularly businesses offering products, technologies and services that are complementary to ours and are suitable for integration into our business, thereby increasing value for our shareholders (and ADS holders). We expect to continue to develop and enhance the products, services and solutions of our investees, and to continue to pursue additional acquisitions of, or investments in, companies that provide IT services and proprietary software solutions.

Capital Expenditures and Divestitures

Our principal investment and divestiture activities since the start of our 2016 fiscal year are described below. For additional information concerning our related financing activities since the start of our 2016 fiscal year, see "Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Sources of Financing."

Changes in our percentage ownership of Sapiens. As of January 1, 2016, our percentage interest in Sapiens was 49.1%. During the last three years, mainly due to exercises of options by employees of Sapiens, our direct interest in Sapiens' outstanding common shares was diluted to 48.9% as of December 31, 2016 and 48.1% as of each of December 31, 2017 and 2018. Our interest in Sapiens' common shares currently remains 48.1%. Pursuant to our acquisitions of Sapiens common shares, we invested an aggregate of \$0.8 million in 2018 (there were no such purchases in 2016 or 2017). The sources of such funds have been our working capital and loans from financial institutions.

Changes in our percentage ownership of Magic Software. We purchased additional ordinary shares of Magic Software in 2016, which resulted in an increase in the percentage of our ownership interest from 46.4% as of January 1, 2016 to 47.3% as of December 31, 2016. Our ownership interest was subsequently reduced to 45.3% in July 2018 as a result of Magic Software's private placement in which Magic Software issued 4,268,293 of its ordinary shares at a price of \$8.20 per share for total net consideration of \$34.6 million, net of issuance expenses. In this private placement, Formula was issued 1,117,734 ordinary shares for total consideration of \$9.2 million, with the remaining ordinary shares issued to certain Israeli institutional investors. Pursuant to our investments in Magic Software's ordinary shares, we invested an aggregate of \$3.4 million in 2016 and \$9.2 million in 2018. We did not purchase any additional ordinary shares of Magic Software in 2017. The sources of such funds have been our working capital and our Series A Secured Debenture financings.

Changes in our percentage ownership of Matrix. As of January 1, 2016, our percentage interest in Matrix was 50.0%. During the last three years, mainly due to exercises of options by employees of Matrix, our direct interest in Matrix's outstanding share capital was diluted to 49.5% and 49.2% as of December 31, 2017 and 2018, respectively (after remaining at 50.0% as of December 31, 2016). Our interest in Matrix's outstanding share capital is currently 48.9%. Pursuant to our acquisitions of Matrix shares, we invested an aggregate of \$0.2 million in 2016 and \$0.1 million in 2018 (there were no such purchases in 2017). The sources of such funds have been our working capital.

Acquisitions by Formula:

Acquisition of Michpal. In January 2017, Formula directly acquired all of the share capital of Michpal, an Israeli-based company that develops, sells and supports a proprietary on-premise payroll software solution for processing traditional payroll stubs to Israeli enterprise and payroll service providers. Formula paid a purchase price of \$22.1 million. For further information, please see Note 4(i)(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of TSG. In May 2016, Formula and IAI each acquired 50% of TSG, a subsidiary, and the military arm, of Ness Technologies, which is engaged in the fields of command and control systems, intelligence, homeland security and cyber-security. Each of Formula and IAI paid a purchase price of \$25.8 million. For further information, please see Note 4(i)(a) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Sapiens:

Acquisition of StoneRiver. On February 28, 2017, Sapiens acquired StoneRiver, a U.S. Denver, Colorado-based provider of a wide range of technology solutions and services to insurance carriers, agents, and broker-dealers, whose product groups encompass P&C solutions, Life solutions, workers compensation, and reinsurance solutions for all major business lines. The acquisition will enable Sapiens to expand the range of solutions and services that it offers to the North American insurance industry and to further accelerate its growing market footprint in the U.S. P&C space. Sapiens paid approximately \$101.4 million in cash. Sapiens-related acquisition costs of \$1.3 million are presented in general and administrative expenses. For further information, please see Note 4(ii)(c) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Adaptik. In March 2018, Sapiens acquired Adaptik, a New Jersey company based in Pennsylvania engaged in the development of software solutions for P&C insurers, including policy administration, rating, billing, customer management, task management and product design. The total purchase price was approximately \$18.2 million in cash (of which \$18.0 million was paid in March 2018 and \$0.2 million will be paid in March 2022) and about \$3.7 million is subject to earn out-based specific criteria relating to achievements of revenue targets over three years (2018-2020). Such payments are subject to continued employment and therefore were not included in the purchase price.

This acquisition better positioned Sapiens to provide North American P&C carriers with an enhanced and complete platform, which has improved Sapiens' competitive position and enabled Sapiens to increase its market share in the North American insurance market. The acquisition of Adaptik together with the acquisition of StoneRiver (in February 2017) created synergy with Sapiens' strong capabilities, and enable Sapiens to offer a truly modern, comprehensive property and casualty digital insurance platform to the U.S. market. Sapiens now offers an innovative P&C digital insurance platform that combines three powerful core components: Sapiens PolicyPro for Property & Casualty (formerly called Adaptik Policy), Sapiens BillingPro for Property & Casualty (formerly known as Adaptik Billing) and Sapiens ClaimsPro for Property & Casualty (formerly called StoneRiver Stream Claims), accompanied by Sapiens' existing solutions for data and analytics, digital engagement and distribution, and the cloud. For further information, please see Note 4(ii)(e) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of KnowledgePrice.com. On December 27, 2017, Sapiens acquired KnowledgePrice.com, a Latvian company that specializes in digital insurance services and consulting. This acquired entity will join Sapiens' Digital Division, which focuses on digital and business intelligence services and solutions, including portal and digital distribution offerings to customers worldwide. Sapiens' acquisition of KnowledgePrice involved the addition of 50 digital insurance technology experts, including innovative portal services. KnowledgePrice has extensive expertise and long-term experience with open technologies, agile methodologies and best practices surrounding digital insurance and the deployment of portals. The total purchase price was approximately €5,840,500, out of which €3,100,000 was paid at closing and €254,000 in January 2018, with the remainder subject to (i) earn-outs based on the revenues and profitability targets of KnowledgePrice.com over three years (2018-2020) following the closing, valued at €1.4 million at the acquisition date and (ii) €0.9 million related to a retention payment subject to continued employment. For further information, please see Note 4(ii)(d) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of MaxPro. In the third quarter of 2016, Sapiens acquired Maximum Processing Inc., or MaxPro, a privately-held company headquartered in Bradenton, Florida, with offices in Garner, North Carolina. MaxPro is the provider of the Stingray System, a P&C insurance administration suite targeted towards the tier 4-5 U.S. market, as well as managing general agents, or MGAs, third-party administrators, or TPAs, and insurance brokers. Sapiens paid \$4.3 million in cash for this acquisition (including \$1.5 million that Sapiens placed in escrow at the closing). The seller may be entitled to receive performance-based payments of up to \$2.5 million relating to achievements of revenue and profitability goals over three years (2016, 2017, 2018), which are also subject to continued employment and therefore were not part of the purchase price. For further information, please see Note 4(ii)(a) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of 4Sight. In the third quarter of 2016, Sapiens acquired 4Sight Business Intelligence Inc., or 4Sight, a provider of business intelligence reports that is based in Austin. 4Sight offers insurance-specific business intelligence, or BI, solutions, including 4SightBI, a P&C-specific, off-the-shelf business intelligence (BI) product. Sapiens paid \$330,000 in cash for this acquisition.

The seller of 4Sight, who was also one of the sellers of MaxPro, may be entitled to receive a total amount of approximately \$5.5 million, subject to certain criteria which include, among others, continued employment criteria. For further information, please see Note 4(ii)(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Matrix:

Acquisition of Alius Corp. In January 2018, Matrix acquired 50.1% of the share capital of Alius consulting group, a U.S based company headquartered in New York, for approximately \$3.2 million in cash, plus an additional \$3.0 million to be paid in two years. Under the terms of the acquisition, Matrix and the seller held mutual options to purchase and sell (respectively) the remaining shares within two years following the closing date under the agreement. In November 2018, Matrix acquired the remaining 49.9% of the share capital of Alius for an additional and final consideration of \$13.8 million. Alius is a global consulting financial firm that provides advisory services in the area of regulatory, risk and compliance in the U.S financial markets. For further information, please see Note 4(iv)(e) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Pleasant Valley Business Solutions, LLC. In March 2018 Matrix acquired 100% of the share capital of Pleasant Valley Business Solutions, or PVBS, a U.S. company, for cash consideration of approximately \$7.6 million. In addition, the seller may be entitled to receive performance-based payments of up to \$6.5 million, estimated on the date of the transaction at \$2.8 million, relating to the achievement of profitability targets over three years (2018-2020). PVBS is engaged in the implementation and assimilation of ERP systems for U.S government suppliers. For further information, please see Note 4(iv)(f) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Cambium (2014) Ltd. In July 2018, Matrix acquired 55% of the share capital of Cambium (2014) Ltd. for NIS 3.0 million in cash (approximately \$0.8 million). Matrix and the seller hold mutual options to purchase and sell (respectively) 15% of the remaining share capital of Cambium. For further information, please see Note 4(iv)(g) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Integrity Software 2011 Ltd. In July 2018, Matrix acquired 65% of the share capital of Integrity Software 2011 Ltd., an Israeli based company, for a cash consideration of approximately NIS 9.0 million (approximately \$2.5 million). In addition, the seller may be entitled to a performance-based payment capped at NIS 4.0 million (approximately \$1.1 million), estimated on the date of the transaction at NIS 0.8 million (approximately \$0.2 million), relating to achievement of certain profitability targets for the years 2019-2021. Matrix and the seller hold mutual options to purchase and sell (respectively) 10% of the remaining share capital of Integrity. Integrity Software specializes in providing software solutions to the enterprise sector in Israel in the fields of software security, IT infrastructure and virtualization. For further information, please see Note 4(iv)(h) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Noah Technologies Ltd. In November 2018, Matrix acquired 100% of the share capital of Noah Technologies Ltd an Israeli based company, for cash consideration of approximately NIS 6.0 million (approximately \$1.6 million). In addition, the seller may be entitled to performance-based payments capped at NIS 4.0 million (approximately \$1.1 million), estimated on the date of the transaction at NIS 1.2 million (approximately \$0.3 million), relating to achievement of certain profitability targets for the years 2019-2021. Noah Technologies Ltd specializes in providing engineering solutions, computerized catalogs and IT professional services. For further information, please see Note 4(iv)(i) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Dana Engineering Ltd. In February 2019, Matrix acquired 80% of the share capital of Dana Engineering Ltd., an Israeli company, for cash consideration of approximately NIS 52.0 million (approximately \$14.4 million). Matrix and the seller hold mutual call and put options, respectively, for the remaining 20% interest in Dana Engineering, which may be exercised following the second-year anniversary of the acquisition. Dana Engineering provides project management services in the field of national infrastructure. For further information, please see Note 24(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of MedaTech Ltd. In March 2019, Matrix acquired 100% of the share capital of MedaTech Ltd, an Israeli company, for cash consideration of approximately NIS 85 million (approximately \$23.6 million). MedaTech is Israel's leading business partner of Priority ERP, with over 1,000 customers in a variety of verticals. For further information, please see Note 24(c) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Aviv. In December 2016, Matrix acquired 85% of the share capital of Aviv Management Engineering Systems Ltd., a company engaged in management and project consulting that focuses in four areas of expertise: environmental planning, project management, urban and physical planning and management consulting. Matrix paid NIS 19.7 million (approximately \$5.1 million). Matrix and the seller hold mutual call and put options, respectively, for the remaining 15% interest in Aviv. The seller may be eligible for future consideration, valued at NIS 1.2 million (approximately \$0.3 million), as of the acquisition date, subject to obtaining accumulated operating income targets over a three-year period. For further information, please see Note 4(iv)(d) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Second to None Solutions, or Stons. In November 2016, Matrix acquired 55% of the share capital of Second to None Solutions Inc., a certified distributor of IBM products to U.S federal and enterprise customers. Matrix paid \$0.3 million. Matrix and the seller hold mutual call and put options, respectively, for an additional 30% interest in Stons. The seller may be eligible for future consideration, which was valued at \$0.5 million as of the acquisition date, subject to obtaining accumulated operating income targets over a three-year period. For further information, please see Note 4(iv)(c) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Network Infrastructure Technologies, or NIT. In October 2016, Matrix acquired 60% of the share capital of Network Infrastructure Technologies Inc., a provider of IT help desk services for the healthcare industry. Matrix paid \$6.7 million. Matrix and the seller hold mutual call and put options, respectively, for the remaining 40% interest in NIT. For further information, please see Note 4(iv)(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Programa. In March 2016, Matrix acquired 60% of the share capital of Programa Logistics System Ltd., an Israeli provider of advisory services and design and development of solutions in supply chain, production and logistics. Matrix paid NIS 7.3 million (approximately \$1.9 million). In addition, the sellers may be eligible for future consideration, which was valued at NIS 1.1 million (approximately \$0.3 million) as of the acquisition date, subject to obtaining accumulated operating income targets over a three-year period. Matrix and the seller hold mutual call and put options, respectively, for the remaining 40% interest in Programa. For further information, please see Note 4(iv)(a) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Magic Software:

Acquisition of Futurewave Systems Inc. In late December 2017, Magic Software acquired a 100% share interest in Futurewave Systems, Inc, a U.S.-based full-service provider of consulting and outsourcing solutions for IT personnel, for total consideration of \$3.0 million. For further information, please see Note 4(ii)(v) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Roshtov. In July 2016, Magic Software acquired a 60% equity interest in Roshtov Software Industries Ltd, the developer of the Clicks development platform, which is used in the design and management of patient-file oriented software solutions for managed care and large-scale healthcare providers. The aggregate purchase price for the 60% interest was approximately \$20.6 million in cash and Magic Software and the seller hold mutual call and put options, respectively, for the remaining 40% interest in Roshtov. For further information, please see Note 4(ii)(c) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Shavit. In October 2016, Magic Software acquired a 100% equity interest in Shavit Software (2009) Ltd., an Israeli-based company that specializes in software professional and outsourced management services, for total consideration of \$6.8 million, of which \$4.7 was paid upon closing. The remaining \$2.1 million of the purchase price was allocated to deferred payment and contingent payment and paid in 2017 (\$0.9 million) and in 2018 (\$1.2 million), as mutually agreed between the parties. The acquisition will broaden Magic's professional service offering to its existing and new customers in Israel. For further information, please see Note 4(iii)(d) to our consolidated financial statements included in Item 18 of this annual report.

Additional Acquisitions by Magic Software in 2016-2018: During each of the years ended December 31, 2016, 2017 and 2018, Magic Software completed several additional acquisitions for total cash consideration of approximately \$8.9 million, \$1.1 million and \$0.6 million, respectively. These acquisitions generally enhance our technologies, product and services offerings, but the companies acquired are not material to our consolidated results of operations, either individually or in the aggregate. For further information, please see Note 4(iii)(e) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Michpal Micro Computers (1983) Ltd:

Acquisition of Effective Solutions Ltd. In November 2018, Michpal acquired an 80% share interest in Effective Solutions Ltd, an Israeli-based service provider of consulting services in the fields of operational cost savings and procurement, as well as salary control and monitoring. The aggregate purchase price for the 80% interest was NIS 24 million (approximately \$6.5 million) in cash. In addition, Michpal and the seller hold mutual call and put options, respectively, for the remaining 20% interest in Effective Solutions. For further information, please see Note 4(iii)(e) to our consolidated financial statements included in Item 18 of this annual report.

B. Business Overview

General

We are a global information technology holding company that is principally engaged through our directly held investees in providing software consulting services and computer-based business solutions, and in developing proprietary software products. We deliver our solutions in over 50 countries worldwide to customers with complex IT services needs, including a number of "Fortune 1000" companies.

Except for providing our investees with our management, technical expertise and marketing experience to help them create a consecutive positive economic impact and long-term value, and direct their overall strategy through our active involvement, we do not conduct independent operations at our parent company level. Following our transition to IFRS during 2016, we consolidate the results of all of the entities in which Formula holds an equity interest, other than our equity investee TSG.

We operate through our subsidiaries: Matrix, Sapiens, Magic Software, InSync and, as of January 2017, Michpal and through our equity investee TSG (since May 2016). The following is a description of the areas of our business activity:

IT Services

We design and implement IT solutions and software systems which improve the productivity of our customers' existing IT assets, enable them to effectively manage their operations and reduce their business risks in the face of changing business environments. In delivering our IT services, we at times use proprietary software developed by members of the Formula Group. We provide our IT services across the full system development life cycle, including definition of business requirements, developing customized software, implementing software and modifying it based on the customer's needs, system analysis, technical specifications, coding, testing, training, implementation and maintenance. We perform our projects on-site or at our own facilities.

Proprietary Software Solutions

We design, develop and market proprietary software solutions for sale in selected niche markets worldwide. We regularly seek opportunities to invest in or acquire companies with attractive proprietary software solutions under development which we believe to have market potential. All of our investments and acquisitions in this area have been in companies with products beyond the prototype stage. In addition, from time to time, we selectively invest in companies with proven technology where we believe we can leverage our experience to enhance product positioning and increase market penetration. We provide our management and technical expertise, marketing experience and financial resources to help bring these products to market. We also assist the members of our group to form teaming agreements with strategic partners to develop a presence in international markets.

The Formula Group

Formula is the parent company of investees, which, as noted above, we refer to collectively (together with Formula) as the Formula Group. As of December 31, 2018, we held 90% of the shares of InSync, a 49.21% interest in Matrix, a 48.08% interest in Sapiens, a 45.21% interest in Magic Software, a 50% interest in TSG through our equity holdings, and the entire share capital of Michpal. We have effective control of each of the companies in the Formula Group other than TSG for purposes of consolidation under IFRS. We provide all our investees with our management, technical expertise and marketing experience to help them create a positive economic impact and long-term value.

We direct the overall strategy of our investees. While our investees each have independent management, we monitor their growth through our active involvement in the following matters:

- strategic planning;

- marketing policies;
- senior management recruitment;
- investment and budget policy; and
- financing policies.

We promote the synergy and cooperation among our investees by encouraging the following:

- transfer of technology and expertise;
- leveling of human resources demand;
- combining skills for specific projects;
- formation of critical mass for large projects; and
- marketing and selling the Formula Group's products and services to its collective customer base.

We, through our investees, offer a wide range of integrated software solutions and IT professional services, such as implementation and integration projects of computing and software, outsourcing, software project management, software development, IT managed services, operating a network of high-tech training and instruction centers, providing software testing and QA, depending on specific needs of the customer and depending on the subject expertise necessary on a case by case basis, and design, develop and market proprietary software solutions for sale in selected niche markets, both in Israel and worldwide. Formula's Chief Executive Officer and Chief Financial Officer serve as the Chief Executive Officer and Chief Financial Officer, respectively, of Magic Software as well.

Our Subsidiaries

Matrix

Matrix IT Ltd. is Israel's leading IT services company as demonstrated in recent research reports of the Israeli IT market, published by the research companies IDC and STKI. Matrix employs approximately 9,250 software, hardware, integration and training personnel, which provide advanced IT services to hundreds of customers in the Israeli and the U.S markets. Matrix executes some of the largest IT projects in Israel. It develops and implements leading technologies, software solutions and products. Matrix provides infrastructure and consulting services, outsourcing, offshore, near-shore, training and assimilation services. Matrix represents and markets leading software vendors. Among its customers are most of the leading Israeli organizations and companies in the industry, retail, banking and finances, education and academe, Hi-tech and ISVs, telecom, defense, health and the government/public sectors. Matrix is traded on the Tel Aviv Stock Exchange.

The solutions, services and products supplied by Matrix are designed to improve Matrix's customers' competitive capabilities, by providing a response to their unique IT needs in all levels of their operations.

Areas of Operation

Matrix operates through its directly and indirectly held subsidiaries in the following principal areas:

- Software solutions and value-added services in Israel.
- Software solutions and services in the United States.
- Computer infrastructure and integration solutions.
- Software product marketing and support.
- Training and integration.

Software solutions and value added services in Israel: Matrix's primary activities in this area include development of software systems and services, including integration projects of systems and software, outsourcing, management of software projects, software development, testing of developed technology, quality assurance and software services, customized for the specific needs of each customer and for the professional expertise required, all on a case by case basis. The scope of work invested in each element varies from one customer to the other. In 2018, under this line of business, Matrix recorded revenues of approximately \$534.4 million, compared to \$486.8 million in 2017, an increase of approximately 10%. Operating income was approximately \$28.4 million in 2018, compared to \$26.7 million in 2017, an increase of approximately 6%. In 2018, activity in software solutions and value-added services in Israel accounted for approximately 60.9% of Matrix's revenues and approximately 46.3% of its operating income.

Software solutions and services in the United States: Matrix provides solutions and expert services mainly in the area of governance risk and compliance (“GRC”), including activities in the following areas: risk management, fraud management, anti-money laundering, and regulatory compliance security in these areas all through its subsidiary Matrix-IFS. Matrix also provides solutions and technological services in the areas of portals, BI (Business Intelligence), DBA (Database Administration), CRM (Customer Relations Management) and EIM (Enterprise Information Management). This sector also includes IT help desk services for healthcare and software distribution services, in particular for IBM and Microsoft. In 2018, under this line of business, Matrix recorded revenues of approximately \$110.4 million, compared to \$91.0 million in 2017, an increase of approximately 21%. Operating income in 2018 was approximately \$16.0 million, compared to \$11.5 million in 2017, an increase of approximately 40%. In 2018, activity in the U.S. accounted for approximately 12.5% of Matrix’s revenues and for approximately 26.2% of its operating income, because of higher operating gross margin in the U.S.

Computer infrastructure and integration solutions: Matrix activities in this area consist of: (i) providing computer and telecommunication infrastructure solutions; (ii) selling and marketing computer equipment, licenses and peripherals to enterprises together with services; and (iii) selling and marketing cloud based solutions (under the “CloudZone” division) and services relating to databases and “big data” (under the “DataZone” division). Amongst Matrix infrastructure and integration solutions included are solutions of IBM, Oracle Red Hat, Boomi and others. In 2018, under this line of business, Matrix recorded revenues of approximately \$146.6 million, compared to \$132.8 million in 2017, an increase of approximately 10%. Operating income in 2018 was approximately \$6.7 million, compared to \$6.0 million in 2017, an increase of approximately 11%. In 2018, activity in computer infrastructure and integration solutions accounted for approximately 16.7% of Matrix’s revenues and for approximately 10.9% of its operating income.

Software product marketing and support: Matrix activities in this area include marketing and support for various software products (mainly originated outside of Israel) and providing professional support for these products to customers, including marketing and upgrade maintenance of software products. In 2018, under this line of business, Matrix recorded revenues of approximately \$41.3 million, compared to \$35.2 million in 2017, an increase of approximately 17%. Operating income in 2018 was approximately \$5.1 million, compared to \$5.7 million in 2017, a decrease of approximately 10%. In 2018, activity in software product marketing and support accounted for approximately 4.7% of Matrix’s revenues and approximately 8.4% of its operating income.

Training and integration: Matrix’s activities in this area consist of operating a network of training centers which provide advanced courses for high-tech professionals, courses for developers and professional training, and soft skills and management training, and providing training and instructions with respect to computer systems. In 2018, under this line of business, Matrix recorded revenues of approximately \$45.2 million, compared to \$41.1 million in 2017, an increase of approximately 10%. Operating income in 2018 was approximately \$5.0 million, compared to \$4.8 million in 2017, an increase of approximately 5%. In 2018, activity in training and integration accounted for approximately 5.2% of Matrix’s revenues and for approximately 8.2% of its operating income.

Matrix provides solutions, services and products primarily to the following market sectors (or verticals): banking and finance, high-tech and startups, industry and retail, government and the public sector, defense, transportation, healthcare, and education and academia.

Matrix offers to each market sector a broad range of solutions and services, customized for the specific needs of that sector. Matrix operates dedicated departments, each of which specializes in a particular sector. Each such department supplies customers in that sector with a products and services offering providing a response to most of its IT requirements, based on an in-depth business understanding of the challenges which are typical to that sector. Matrix established a separate division for each particular market sector, which manages the operations relating to that sector.

Specialization in the various sectors is reflected in the applications, professional and marketing aspects of each sector. Accordingly, the professional and marketing infrastructure required to support each market sector is developed to address such sector’s specific needs.

In addition to the five sector-based areas of operations, Matrix operates three horizontal divisions providing specialist services for all of the different sectors of operations as follows:

- Expertise centers – Matrix operates approximately 20 “expertise centers” (“Centers of Excellence”), in areas such as: Cloud Computing, Internet of Things (IOT), Digital, User Experience, Mobility (Mobile Technology), Analytical BI and Big Data, DevOps, Service Oriented Architecture (SOA), Customer Relations Management (CRM), Enterprise Resource Planning (ERP), eXtended Relationship Management (XRM), Open Source, Security & Cyber, Machine Learning and Artificial Intelligence. These expertise centers are based on business vertical concept, which is targeted to yield significant added value to the company’s customers, including: group of professionals that are focused and have expertise in the related technologies, hands-on experience and expertise in the related technologies, methodologies, and best practices; and strategic management consulting center that provides customers with diverse consultation services on topics such as organization, strategy, complex project management in areas such as environmental planning, transportation and chain of supply, business development and technological development.

- Matrix Global - Quality assurance and related professional services under an offshore/“nearshore” model.
- Management/engineering consulting services - Comprehensive management and engineering consulting services, from the stage of adoption of strategy through the stages of implementation and effecting of changes, including project management of complex projects, including engineering projects, engineering supervisory projects of a wide scope, and projects in the fields of planning and environmental, and transportation, as well as multiple-field engineering advisory services and advisory and implementation in the field of management of supply chain and management of operational logistics.

In the context of its offshore/“nearshore” activities, Matrix conducts IT-related activities, including content development, quality assurance, maintenance, customer call center services indexing and related activities that are performed in a specific region or country where such activities can be conducted most inexpensively. Matrix offers its enterprise customers these types of solutions, whether via its “nearshore” Talpiot project, via its offshore solutions that are based on its development centers in Bulgaria and Macedonia or via back-office and call center services through Babcom Centers Ltd. (a company located in the Galilee, housing thousands of educated and skillful men and women interested in developing a career near their homes). Periods of economic cautiousness (such as the present time) provide an added incentive for these types of inexpensive economic solutions. This trend is likely to expand Matrix’s operations in these areas in the context of its “Matrix Global” activities.

Matrix’s customers include large and medium size enterprises in Israel, including commercial banks, loan and mortgage banks, telecommunications services providers, cellular operators, credit card companies, leasing companies, insurance companies, security agencies, hi-tech companies and startups, the Israeli Defense Forces and government ministries and public agencies and media and publishing entities. Approximately 60% of Matrix’s customers in the software solutions and value-added services business segment in Israel have a business relationship with it for more than ten years and 25% of them have such a relationship for between five and ten years. 40% of Matrix’s customers in the software solutions and value-added services business segment in Israel operate in the financial, banking and insurance sector, 19% in the industry, retail and hi-tech sector, 13% in the government sector, 11% in the defense sector, and the remaining 17% in other business sectors.

Sapiens

Sapiens International Corporation N.V. is a leading global provider of software solutions for the insurance industry. Sapiens’ extensive expertise is reflected in its innovative software platforms, suites, solutions and services for property & casualty (P&C); life, pension & annuity (L&A); reinsurance; financial and compliance (F&C); workers’ compensation (WC); and financial markets. Sapiens offers a full digital suite that facilitates an innovative, holistic and seamless digital experience for carriers, agents, customers and assorted insurance personnel, across multiple devices and technologies. Sapiens’ offerings enable its customers to effectively manage their core business functions, including policy administration, claims and billing, and to offer support during an insurer’s journey to becoming a digital insurer. Sapiens’ portfolio also covers underwriting, illustration and electronic application.

Sapiens also supplies a complete reinsurance offering for providers and a decision management platform tailored to a variety of financial services providers, so that business users can quickly deploy business logic and comply with policies and regulations across their organizations.

Sapiens’ platforms possess modern, modular architecture and are digital-driven. They empower customers to respond to the rapidly changing insurance market and frequent regulatory changes, while improving the efficiency of their core operations. These process enhancements increase revenue and reduce costs.

2018 was a year of moderate growth for Sapiens, while building the foundation for growth for 2019 and beyond. As described further below, in 2018, Sapiens acquired Adaptik, a Pennsylvania-based firm that offers P&C insurers policy administration and billing capabilities for commercial, personal, specialty and workers’ compensation lines of business. The acquisition was another step in Sapiens’ journey to offer the U.S. insurance market a modern, modular, fully integrated property and casualty insurance platform.

In February 2017, Sapiens acquired StoneRiver, a U.S. based company that offered a reach product portfolio that was comprised of claims, billing, rating, underwriting, illustration, reinsurance and F&C solutions for all major insurance business lines, across both P&C and L&A. StoneRiver’s rich set of solutions complements Sapiens’ offerings and has helped Sapiens accelerate its growth in the U.S. market, as well as globally.

In December 2017 Sapiens expanded its Digital division’s capabilities through the acquisition of KnowledgePrice.com (or KnowledgePrice), a technology specialist with expertise in digital insurance services and consulting. The expanded Digital division will create innovative offerings and provide full support during customers’ digital journeys.

Privately-held KnowledgePrice employed digital insurance technology experts and supplied services to leading insurance providers in the UK and Europe. KnowledgePrice personnel joined the Sapiens Digital division – which focuses on digital and business intelligence (BI) services and solutions, including customer and agent portal solutions and digital distribution offerings to customers worldwide. Former KnowledgePrice personnel now staff a Sapiens center for excellence for digital engagement services.

In March 2018, Sapiens also announced the acquisition of Adaptik, a North American (NA) P&C solution provider. This acquisition better positioned Sapiens to provide North American P&C carriers with an enhanced and complete platform, which has improved Sapiens' competitive position and enabled the Company to increase its market share in the North American insurance market. The acquisition of Adaptik and StoneRiver (in February 2017) created synergy with Sapiens' strong capabilities, and enable Sapiens to offer a truly modern, comprehensive property and casualty digital insurance platform to the U.S. market. Sapiens now offers an innovative P&C digital insurance platform that combines three powerful core components: Sapiens PolicyPro for Property & Casualty (formerly called Adaptik Policy), Sapiens BillingPro for Property & Casualty (formerly known as Adaptik Billing) and Sapiens ClaimsPro for Property & Casualty (formerly called StoneRiver Stream Claims), which are accompanied by Sapiens' existing solutions for data and analytics, digital engagement and distribution, and the cloud.

Sapiens' enhanced managed services offerings and cloud deployment have been adopted by several major customers and are expected to grow in the coming years. By allowing Sapiens to manage a substantial part of their ongoing IT operations, customers can focus on their core insurance competency and business.

In February 2019, Sapiens announced a complete rebranding that highlights its evolution to a unified global provider of insurance software solutions. The new brand identity marks Sapiens' growth into a one-stop-shop for insurance software solutions. Sapiens has renamed its entire product portfolio and changed the look-and-feel and contents of all its collateral, and launched a new website. Sapiens' new master brand architecture and descriptive solution names quickly communicate its offerings' main functions and frame Sapiens as a unified company (following the acquisitions described above). The updated look features Sapiens' human-to-human (H2H) approach, reflecting the long-term partnerships Sapiens has with customers and employees and that is reflected in the entirely new marketing communications suite that Sapiens has developed.

Sapiens' Target Markets

Sapiens operates in a large market undergoing significant transformation. According to the Gartner report "Forecast: Enterprise IT Spending for the Insurance Market, Worldwide, 2016-2022, 4Q18 Update" (a market statistics research report by Gartner, a research and consulting firm, written by James Ingham, Venecia K. Liu and Rika Narisawa that was published on February 10, 2019, and which we refer to herein as the Gartner report), Gartner forecasts that the global IT spending insurance market will grow by 3.7% in 2019, to \$220.7 billion in U.S. dollars (on a constant-currency basis). This industry is forecast to reach nearly \$244 billion by 2022, growing at a 3.6% compound annual growth rate (CAGR) for the period from 2017 through 2022.

We believe that Sapiens' current total addressable market for core insurance software solutions and the accompanied point solutions is approximately \$40 billion, which we expect will grow as a result of insurance carriers' and financial institutions' need to address, via modern software solutions from external providers, the operational challenges presented by the inefficiency of their legacy core systems. Legacy systems reflect technical and functional limitations that adversely impact carriers' ability to swiftly launch new, innovative products that satisfy their customers' changing needs and preferences.

By slowing down carriers' business and geographic expansion, legacy systems create operational inefficiencies that result in increased business risk and financial costs. They are also a barrier for the adoption of digital capabilities, due to their inability to communicate and interact with innovative digital solutions. Today's insurance providers are looking for more than just the traditional "core" capabilities. They seek insurance platforms with a wider range of capabilities, including full digitalization.

Sapiens' customers operate in a constantly evolving regulatory environment. Often their legacy systems simply do not support new regulatory requirements and put carriers at risk of costly non-compliance. There is also a strong trend of shifting attention to the end-customer experience and activities, with a focus on digital operations. Many insurers are currently unable to provide the type of quality digital experience that their customers are already enjoying across most other verticals, and customer satisfaction is only one of the many recognized benefits of going digital. This can only be supported via increased usage of data for decision-making, risk analysis, customer evaluation and rating, which requires a streamlined data flow and easy access to information from multiple sources.

We believe these challenges will accelerate the shift from spending on legacy systems to new vendor software solutions. It is also Sapiens' view that these challenges are too difficult to overcome via "in-house" systems and that the majority of insurers will turn to external software vendors, such as Sapiens.

Property & Casualty Market

Property & casualty insurance protects policyholders against a range of losses on items of value. P&C insurance includes the **personal segment**, which is insurance coverage for individuals, with products such as motor, home, personal property and travel; the **commercial segment**, covering aspects of commercial activity, such as commercial property, car fleets and professional liability; and **specialty lines**, covering unique domains, such as marine, art and credit insurance. This market also includes workers' compensation for market carriers, administrators and state funds.

During the past few years, the P&C market has been characterized by a fast rate of digital adoption. New business and technology models are adopted rapidly, to launch innovative business offerings. This requires advanced software solutions, both on the "core" layer, which needs to be flexible and open, and with the variety of digital tools addressing customer experience needs.

Life, Pension and Annuity Markets

Life, pension & annuity providers offer their customers a wide range of products for long-term savings, protection, pension and insurance. They assist policyholders with financial planning through life insurance, medical and investment products. Their products can be classified into several areas, primarily investment and savings, risk and protection, pension and health-related products. These products can be targeted to individuals, as well as group- and employee-benefit types of products.

The products in this field are long-term in nature. When insurance providers consider purchasing new platforms from Sapiens, the decision is typically slower and involves multiple decision-makers throughout the organization.

Digital Market

Insurance carriers risk losing their customers if they do not provide the type of digital experience that all of us have come to expect from the retailers and service providers we interact with daily. Agents, brokers and other channel and service providers also require a powerful digital ecosystem to capably carry out their crucial tasks.

It is not enough to simply provide a portal to offer today's consumers the online presence they demand, or to work with an isolated analytics system to parse data. A big step up is needed via an all-encompassing digital approach featuring integrated components functioning at their highest levels and complementing each other.

Reinsurance Market

Reinsurance is insurance that is purchased by an insurance company (ceded reinsurance) from another insurance company (assumed reinsurance) as a means of risk management. The reinsurer and the insurer enter into a reinsurance agreement, which details the conditions upon which the reinsurer would pay the insurer's losses. The reinsurer is paid a reinsurance premium by the insurer and the insurer issues insurance policies to its own policyholders. The insurer must maintain an accurate system of records to track its reinsurance contracts and treaties, to avoid claims leakage.

Workers' Compensation

Workers' compensation is one of the largest lines of business in the property and casualty (P&C) industry in North America. But future profitability is getting harder to maintain, with medical and indemnity costs per lost time claim increasing at rates greater than inflation. Insurance organizations require technology solutions that can adapt quickly to business and market conditions, offering high levels of accuracy and efficiency.

Financial & Compliance Market

Financial professionals face overwhelming challenges as they struggle to satisfy ever-changing regulatory requirements, while meeting the demands of managerial reporting. The move towards globalization has introduced new currencies, and CEOs need more performance data for strategic decision-making. Organizations require one partner to optimize efficiencies with solutions that can be implemented quickly.

Decision Management Markets

Increasing competition, regulatory burden, customer experience expectations and the proliferation of digital and product innovation requirements have necessitated a shift in thinking and approach among organizations across verticals. By replacing conventional policy and process management with the discipline known as "decision management," financial institutions are bridging the gap between business and IT, by enabling business users to rapidly frame requirements in formal business models that can be easily understood by all stakeholders.

The decision management processes affect overall corporate performance, including its impact on customers and competitors. Decision management systems are a key performance component of every financial services organization, as they help the organization define, avoid and hedge financial risk.

Needs of Sapiens' Target Markets

Large insurance and financial organizations must constantly invest in their IT systems to respond to key market drivers. They require the ability to:

- Satisfy today's sophisticated, tech-savvy and demanding end-customers – who demand the type of instant, personalized service they enjoy via Facebook or Amazon – via digitalization and innovative initiatives, providing a stronger customer experience and engagement.
- Use advanced technologies, such as artificial intelligence (AI) and machine learning, to facilitate, improve and automate traditional insurance processes.
- Provide innovative business models, based on technology capabilities and digital operation (such as a portal, a web-based acquisition process, advanced analytics, customer engagement platforms and the usage of data sources – including wearables, the Internet of Things (IoT) and robo-advice.
- Respond to complex and evolving regulatory standards, such as Solvency II, IFRS 17, Dodd-Frank legislation, GDPR, etc.
- Support internal customers' growth and operations. This includes reducing the time to market of new products, expanding into new geographies, reducing costs and streamlining operations.
- Rapidly launch new products and propositions to the market, within a short timeframe and using existing, pre-defined capabilities.

Specific Needs of the Insurance Markets

The insurance market is a large, complex and highly regulated environment. Insurance carriers operate in a super-competitive and quickly evolving market, which necessitates differentiating their value propositions. Additionally, carriers operate under a rigid regulatory regime that demands fast compliance. The insurance market is going through a rapid evolution process, driven by new technologies, digital capabilities and new business models, all enabled by new technologies.

To efficiently manage their operations, insurance carriers require IT platforms that enable rapid introduction of changes via configurable, user-driven activities, integration with internal and external systems, control and auditing of employees' work, support for omni-channel distribution and clear visibility into the carrier's business operations, through streamlining and intelligent usage of data.

To compete in the rapidly-changing environment, and win the competition for end-customers, insurance carriers require a coherent digital proposition, allowing them to better interact with their customers in a digital and omni-channel manner. They are increasingly using robotics, predictive analytics, AI and machine learning to automate processes and obtain stronger business insights. The cloud can also be utilized for improved operations and scale.

Insurance carriers are experiencing substantial operational challenges due to the inefficiency of their legacy policy administration systems and their lack of digitalization. These legacy systems, which include both technical and functional limitations, acutely impact carriers' ability to cope with growing challenges, such as the need for innovation, the shift of power to the consumer, and the dynamic and constantly changing regulatory environment.

Sapiens' Software Solutions

Overview

Sapiens is a leading global provider of software solutions for the insurance industry. By enabling its insurance and financial services customers to digitize their business and be more agile in the face of changing business environments, we help them take advantage of powerful current trends – such as the Internet of Things, artificial intelligence, machine learning, customer engagement, chat bots, etc. – while simultaneously reducing IT costs.

Sapiens offers its insurance customers a range of packaged software solutions that are:

- **Digital** – reveal the customers' history and anticipate their future needs, while facilitating easy engagement across preferred interaction channels and multiple devices.

- **Data-driven** – are based on set of data analysis tools, from data-warehouse and reporting, through business intelligence and analytics, to predictive and advanced analytics – so its customers can become a data-driven operation.
- **Highly automated** – use various technologies, from decision to robotics, thereby improving efficiency and offering agile customer engagement.
- **Comprehensive and functionally-rich** – provide support for insurance standards, regulations and processes, by providing field-proven functionality and best practices.
- **Customizable & configurable** – easily match its customers’ specific business requirements. Sapiens’ flexible architecture and configurable structure allow quick functionality augmentation that permits its platform to be used across different markets, unique business requirements and regulatory regimes. Sapiens utilizes its knowledge and extensive insurance best practices and feature business-led configuration.
- **Open architecture and insurtech ecosystem** – provide easy integration to any external application under any technology, allowing streamlined connectivity to all satellite applications. This enhances the digital experience and omni-channel distribution, while maintaining total platform independence and system reliability. Easy interaction with various insurtech companies providing point-solutions that can be consumed by Sapiens’ platforms is enabled.
- **Component-based and scalable** – allow Sapiens’ customers to deploy platforms and solutions in a phased and modular approach, reducing risk and harm to the business, while supporting the growth plans and cost efficiency of the organization.

Sapiens’ packaged software solutions enable:

- **Rapid deployment of new insurance products** – via configurable software, which creates a competitive advantage in all the insurance markets Sapiens serves.
- **Improvement of operational efficiency and reduction of risk** – full insurance process automation, with configurable workflows, audit and control, streamlined insurance practices, and simple integration and maintenance.
- **Reduction of overhead for IT maintenance** – easy-to-integrate solutions with flexible and modern architecture, resulting in lower costs for ongoing maintenance, modifications, additions and integration.
- **Enhanced omni-channel distribution and focus on the customers** – event-driven architecture, a proactive client management approach, rapid access to all levels of data, and a holistic view of clients and distributors.
- **Cloud-first as a preferred deployment model** – flexibility to also provide an on-premises deployment approach.
- **Support for digitalization** –insurers and financial services institutions who manage to efficiently digitalize their operations, support omni-channel distribution and ensure that agents and customers are able to access real-time, accurate data at any time and from anywhere – including tablets and mobile devices – will unlock massive potential.
- **Managed services** – Sapiens’ customers access to a long-term engagement by providing comprehensive support for their daily IT operations, while allowing them to focus on their business KPIs.

Sapiens Property & Casualty Solutions

Sapiens Platform for Property & Casualty

The Sapiens Platform for Property & Casualty is an end-to-end, cloud-based platform with advanced digital capabilities. It can be implemented as a pre-integrated platform, or as stand-alone modules. The platform addresses all P&C carrier needs across all lines of business and distribution channels, offering a wealth of digital features. It is comprised of core (policy, billing and claims), data (advanced analytics) and digital (a full suite) solutions.

Sapiens offers two core suites, based on region:

Sapiens CoreSuite for Property & Casualty (North America)

Sapiens CoreSuite for Property & Casualty is comprised of three fully integrated, core components that can also be deployed stand-alone: Sapiens PolicyPro, Sapiens BillingPro and Sapiens ClaimsPro.

CoreSuite is pre-integrated with additional components that can be selected, including business intelligence, reinsurance and portal solutions (customer and agent), as well as various interfaces.

This modular, automated, highly customizable suite offers a single platform for personal, commercial and specialty lines of business (LoBs). This increases organizational efficiency by reducing manual effort, generates competitive advantages and saves costs.

Sapiens IDITSuite for Property & Casualty (EMEA & APAC)

The Sapiens IDITSuite for Property & Casualty (formerly called Sapiens IDIT) is a component-based, stand-alone software solution suite that offers policy, billing and claims and forms the core of the Sapiens Platform for Property & Casualty. IDITSuite supports all end-to-end core operations and processes for the non-life P&C market from inception, to renewal and claims. This pre-integrated, fully digital suite offers customer and agent portals, business intelligence and more. IDITSuite enables insurers to expand their offerings by testing new lines of business, products and services using Sapiens' flexible product factory.

The suite is modular, or can integrate with your ecosystem's components. IDITSuite for Property & Casualty includes multiple lines of business in one policy for multiple insured objects and assets. It can support corporate agreements and master policy structures. IDITSuite is designed with growth and change in mind, with extensive multi-company, multi-branding, multi-currency and multi-lingual capabilities. The IDITSuite management system is built on open technology and can be used on desktops, laptops and tablets, as well as smartphones (requiring a mobile portal).

Sapiens Policy Administration Solutions

The Sapiens policy solutions for property & casualty come pre-integrated with the core system. They are easily integrated with existing and external systems and applications. The solutions manage the end-to-end policy administration lifecycle of an insurance contract, from initial quote, through rating and policy issuance. They also feature a complete range of policy issuance and amendment capabilities. Agents, underwriters and customers use the solutions to quote, issue and administer policies. The offerings provide comprehensive policy lifecycle support for all P&C lines of business.

Sapiens Billing Solutions

The Sapiens billing solution for P&C enables carriers, MGAs and brokers to manage the full lifecycle of premium services, taxes and fees, along with commission billing, collection and disbursements. P&C carriers can integrate with third-party systems and data repositories, enjoy best-in-class usability and automate processes throughout the billing lifecycle.

Sapiens Claims Solutions

Sapiens' claims solutions for property & casualty provide simplified management and automated control of claims management handling and the settlement process. They offer intelligent, rules-driven workflow with effective claim assignment, ensuring faster cycle times, as well as rules-driven automatic claims payment.

Sapiens Stingray for Property & Casualty

Sapiens Stingray for Property & Casualty is a complete solution with quick implementation for all P&C insurance lines, providing a complete core processing solution right out of the box. Its modular software components are designed with flexibility in mind. This solution is customizable and well-suited for tiers 4-5.

P&C Digital Offerings

The Sapiens DigitalSuite (formerly known as Sapiens Digital Suite) offers an end-to-end, holistic and seamless digital experience for P&C customers, agents, brokers, customer groups and third-party service providers. The suite is pre-integrated with Sapiens' P&C core and is comprised of digital engagement and digital enablement and API layer components. The suite is cloud-based.

Sapiens Life, Pension & Annuity Solutions

Sapiens Platform for Life, Pension & Annuities

The Sapiens Platform for Life, Pension & Annuities is a modern, digital insurance platform that includes core, data and digital solutions. With the ability to deploy its offerings as a complete platform, or as stand-alone modules, Sapiens can address life providers' needs across all their lines of business and distribution channels. Sapiens' mature platform is cloud and API-based, and features a strong core and advanced analytics, as well as data enablement and full digital engagement capabilities.

Sapiens CoreSuite for Life, Pension & Annuities

Sapiens CoreSuite for Life, Pension & Annuities (formerly called Sapiens ALIS) is designed to provide excellence in the administration of insurance business, facilitate digital transformation and fast time-to-value for digital strategies, and create greater efficiency via legacy consolidation. It offers insurers:

- A single platform for individual and group business
- Transformation, enablement and execution for digital strategies
- Greater efficiency via improved automation, user experience and system consolidation

Single Platform

The Sapiens CoreSuite software suite supports the end-to-end administration of group and individual life, annuities, pension and investment business – in a single system. The suite offers a 360-degree view of the customer from their policy administration system, across all distribution channels and communication streams.

Existing System Consolidation

Many insurers still use systems developed decades ago that cannot support today's regulatory changes, digital marketplace and demanding customers. Too many manual processes can lead to errors that impact customer experience. Sapiens' unique conversion approach reduces the risks involved in migrating from existing legacy systems.

Sapiens UnderwritingPro for Life, Pension & Annuities

Sapiens UnderwritingPro for Life, Pension & Annuities (formerly called StoneRiver LifeSuite) is a web-based solution for automated underwriting and new business case management that is part of Sapiens' core suite. It speeds new business processes for insurance carriers and their channels, offering an intuitive user interface with critical updates and task assignments provided on a real-time dashboard. Sapiens UnderwritingPro enables underwriters and case managers to work on multiple cases simultaneously.

Sapiens ApplicationPro for Life & Annuities

Sapiens ApplicationPro for Life & Annuities (formerly known as StoneRiver LifeApply) is web-based insurance application software that provides carriers with the choice of a stand-alone eApplication system, or a more comprehensive solution that seamlessly integrates with Sapiens IllustrationPro for Life & Annuities (formerly called StoneRiver Life Portraits) and Sapiens UnderwritingPro for Life & Annuities (formerly StoneRiver LifeSuite). Sapiens ApplicationPro is robust electronic application software that helps carriers address critical business drivers, such as decreasing time-to-issue and reducing policy acquisition costs, all in an extremely intuitive and easy-to-use package.

Sapiens IllustrationPro for Life & Annuities

Sapiens IllustrationPro for Life & Annuities (formerly called StoneRiver Life Portraits) is a point-of-sale solution, offering responsive product illustrations from any location in an electronic environment, with internet and desktop support. ACORD®-compliant, it offers straight-through processing, from point-of-sale to application e-submission, supported by a needs analysis suite. IllustrationPro explains complex products in a compelling way. Its powerful calculation engines handle the most complex product illustrations, including the appropriate historical and hypothetical references.

Sapiens ConsolidationMaster for Life & Pension

Sapiens ConsolidationMaster (formerly called Sapiens Closed Books) is a purpose-built, end-to-end, legacy, portfolio-focused system with a unique migration methodology that deals with "dirty" data. The solution has over 500 product templates capable of supporting the compliant administration of legacy products in any language and regulatory jurisdiction. ConsolidationMaster is designed to significantly cut the costs that are commonly associated with legacy platforms.

Digital Transformation

Sapiens CoreSuite features full pre-integration to the Sapiens DigitalSuite and digital capabilities have been enhanced via adaptors. This facilitates digital transformation and fast time-to-value for digital strategies. It enables life carriers to become engaged, agile organizations with increased sales opportunities. By integrating CoreSuite with our advanced analytics solution and data warehouse, Sapiens can quickly generate actionable insights, self-service business intelligence and data discovery capabilities, across all mobile devices (and in the cloud).

Sapiens Digital Offerings

Sapiens Intelligence

Sapiens Intelligence is an innovative business intelligence solution specifically designed for the insurance market. The solution is based on the advanced technology of SAP's analytics platform and on insights from scores of customers in production. It empowers business users to quickly and easily draw business conclusions and insights from raw data, via self-service analytics and easy-to-use, modern tools. Sapiens Intelligence drives analytics adoption across the organization with compelling, insightful dashboards and apps.

Sapiens IntelligencePro

Sapiens IntelligencePro (formerly 4SightBI) suite is a comprehensive, affordable BI solution, with over 100 pre-configured reports, dashboards, scorecards, ad hoc reporting and hundreds of analytics. With "what-if?" capabilities and ease-of-use in underwriting, claims, billing, management, reinsurance and other areas, carriers can generate actionable insights and heal their pain-points.

Sapiens DigitalSuite

Sapiens DigitalSuite offers an end-to-end, holistic and seamless digital experience for customers, agents, brokers, customer groups and third-party service providers. The suite is pre-integrated with Sapiens' core suites and is comprised of Sapiens DigitalHub (API Layer and Digital Studio) that enables openness and connectivity with partners; Sapiens AgentConnect (formerly Sapiens PORTAL) and Sapiens CustomerConnect (formerly Sapiens PORTAL) portals, specifically designed for the life, pension and annuities (L&A), property and casualty (P&C), and additional insurance markets; and Sapiens PartnerHub. The suite is cloud-based.

Sapiens CustomerConnect

Sapiens CustomerConnect (formerly called Sapiens PORTAL) is a modular, highly innovative portal solution specifically designed for the life, pension & annuity (L&A) and property and casualty (P&C) insurance markets. It is a direct-to-consumer application, enabling insureds to buy policies, view the statuses of their policies and accounts, and issue claims. Many other transactions can be performed that save both consumers and insurers time, and reduce costs, while increasing overall consumer satisfaction.

Sapiens AgentConnect

Sapiens AgentConnect (formerly called Sapiens PORTAL) is a modular, highly innovative portal solution specifically designed for the life, pension & annuity (L&A) and property & casualty (P&C) insurance markets. It empowers agents with full lifecycle enablement, including the ability to manage their pipeline, sell policies to their consumers and provide top-level customer service in real-time. Agents can also see a holistic view of their business performance overall and benefit from full access to all their remunerations, payments, commission transactions and statements.

Sapiens DigitalHub

Sapiens DigitalHub (API Layer and Digital Studio) facilitates an open-communication, API-based platform that enables carriers to interact with insurtech companies, ecosystem technology providers and business partners. By enabling seamless interaction with any service under any technology, Sapiens' open architecture ensures that providers will easily choose the building blocks they need. They will be able to seamlessly integrate all elements within their insurance ecosystem, to succeed today and prepare for the future.

Sapiens PartnerHub

Sapiens is a global organization with over three decades of extensive experience in insurance innovation and technology. Sapiens seeks out and identifies the most relevant, advanced and innovative technology solutions for the insurance market. Sapiens connects third-party technology and insurtech solutions to its Sapiens PartnerHub, from where it makes their offerings available to insurers for their own use, and for the use of their customers.

Sapiens ReinsuranceMaster

Sapiens ReinsuranceMaster (formerly called Sapiens Reinsurance) is a comprehensive business and accounting system, providing a superior solution for all types of reinsurance contracts – treaty and facultative, and proportional and non-proportional. It enables insurers of all sizes to manage their entire range of reinsurance contracts and activities for all lines of business, including rich accounting functionality and reporting capabilities.

Sapiens' reinsurance solution enables full and flexible control of reinsurance processes, with built-in automation of contracts, calculations and processes. By incorporating fully automated functions adapted conveniently for your business procedures, Sapiens Reinsurance provides flexible and total financial control of your reinsurance processes, including complete support for all auditing requirements and statutory compliance.

Sapiens ReinsurancePro

Sapiens ReinsurancePro (formerly called StoneRiver URS) is an efficient reinsurance administration system, supporting all types of reinsurance processing, regardless of volume, in one comprehensive and powerful reinsurance system. The system produces Schedule F automatically. Sapiens' solution enables insurance companies to manage and automate the underwriting and administration of reinsurance, including treaty and facultative, ceded, assumed and retroceded reinsurance.

Sapiens Reinsurance GO

Sapiens Reinsurance GO (formerly called StoneRiver FRS) is designed to meet the ceded reinsurance processing needs of property and casualty providers, from calculating premium and claim cessions, to producing the data required for Schedule F. Sapiens Reinsurance GO consolidates reinsurance accounting and cash management into one area. It automatically attaches and calculates ceded premium, commissions, losses, reserves and LAE, and automatically allocates ceded transactions to reinsurers.

Sapiens' Workers' Compensation Offerings

Sapiens Platform for Workers' Compensation

The Sapiens Platform for Workers' Compensation includes the Sapiens CoreSuite for Workers' Compensation, Sapiens Connect for Worker's Connection (a portal solution) and Sapiens IntelligencePro (business intelligence).

Sapiens CoreSuite for Workers' Compensation

The Sapiens CoreSuite for Workers' Compensation (formerly StoneRiver PowerSuite) offers larger carriers, administrators and state funds the technology solutions that enable them to adapt quickly to business and market conditions, offering high levels of accuracy and efficiency. The suite provides broad functionality throughout the entire insurance lifecycle for workers' compensation, via a core suite, as well as policy, claims and intelligence modules that can be deployed individually, or as an integrated solution. This suite can be purchased as an integrated offering, or standalone components:

Sapiens PolicyPro and Sapiens ClaimsPro

Sapiens GO for Workers' Compensation

Sapiens GO for Workers' Compensation (formerly called StoneRiver CompSuite) was developed specifically for carriers, managing general agents (MGAs), self-insurance funds and third-party administrators. Sapiens GO can deliver a turnkey solution in just 120 days. With its streamlined user interface and advanced business features, the suite addresses critical objectives for carriers, MGAs, self-insurance funds and third-party administrators (TPAs). This suite can be purchased as an integrated offering, or stand-alone components:

Sapiens PolicyGO and Sapiens ClaimsGO for Workers' Compensation

Sapiens Financial and Compliance Solutions

Sapiens FinancialPro

Sapiens FinancialPro (formerly called StoneRiver PRO) is accounting software designed for insurers to meet their unique requirements for cash, statutory and GAAP reporting, well as unique allocation and consolidation needs. It handles multi-basis accounting and inter-company transactions, and facilitates the speed and accuracy of financial reporting. Sapiens insurance experts assist carriers in collecting and reporting information they need to expedite all regulatory processes.

Sapiens Financial GO

Sapiens Financial GO (formerly called StoneRiver PTE) gives small- and mid-sized insurers a competitive edge in today's marketplace, because it is developed and supported by highly experienced insurance experts. The solution is designed to meet insurers' specific requirements for cash, statutory and GAAP reporting, as well as unique allocation and consolidation needs. Sapiens Financial GO manages and presents data to help insurance managers make informed decisions.

Sapiens StatementPro

Sapiens StatementPro (formerly StoneRiver eFreedom) makes statement preparation faster and simpler by offering one-click navigation between statements, pages and form validations (cross-checks) to the pages they reference. Intuitive workflow and helpful wizards lead users effortlessly through each step, transforming the filing process and offering one-step filing. Additionally, Sapiens offers Sapiens CheckPro (formerly called StoneRiver Power2Pay) and Sapiens Reporting Tools.

Sapiens Business Decision Management Solutions

Sapiens Decision is a set of complete decision management solutions that place software development in the hands of the business domain and enforce business logic across all enterprise applications. Decision effectively addresses the complexity of determining and then translating business logic – data, business rules and machine learning used to make business decisions – into operational code. The business side of the organization can model, validate, test and simulate the business logic required for all new processes using Sapiens Decision. The process takes days or weeks, instead of months or years. A rigorous, structured approach ensures accuracy, efficiency and consistency during modeling. The models may then be automatically generated and deployed as code into automated DevOps environments, ensuring that the software is fully aligned with the organization's business needs.

Sapiens is currently focusing on the development and marketing of Sapiens Decision in the financial services market in North America and Western Europe. Sapiens is building best practices to be used primarily by mortgage, retail and investment banking where the scale and complexity of operations requires enterprise-grade technology that can easily be adapted as policies and business strategies rapidly evolve. Sapiens also developed and markets Sapiens Decision for the insurance industry and leverage its industry knowledge and close relationships with its existing customers and partners. Decision targets multiple markets, including consumer and commercial, investment and mortgage banking; as well as the P&C and life insurance markets.

Sapiens Decision for Insurance (formerly called Sapiens DECISION) enables insurers to efficiently adapt their business operations to the demands of digital transformation, changing regulations, customer demands and increasing competition. It is currently used by a top-tier, P&C insurance company to implement process automation and effect digital transformation. Sapiens Decision transforms how insurance carriers are approaching change, by modernizing traditional business rules management. It enables insurers to grow their business and respond to market needs through accurate and consistent enforcement of business rules and policies.

Technology-Based Solutions

Sapiens eMerge

Sapiens eMerge is a rules-based, model-driven architecture that enables the creation of tailor-made, mission-critical core enterprise applications with little or no coding. Sapiens' technology is intended to allow customers to meet complex and unique requirements using a robust development platform. For example, Sapiens performs proxy porting for its customers in an efficient, cost effective manner with Sapiens eMerge.

Sapiens' Global Services

The Sapiens Service Suite is comprised of three main pillars: **program delivery**, **business services** and **managed services**, as well as Sapiens' various methodologies (which are applied across the first three pillars).

Program delivery includes:

- Project and program management
- Core development and implementation
- Integration
- Deployment
- Testing

Business transformation services are comprised of:

- Business transformation – planning and strategy, business process evaluation, training and change management
- Digital transformation – business model and processes transformation, plus data management consolidation and data migration
- User acceptance testing (UAT)
- System integration

Managed services include:

- Hosting services
- Application and system management
- Ongoing production support

Sapiens' services modernize and automate processes for insurance providers and financial institutions around the globe, helping to create greater organizational efficiencies, reduce costs and provide a better end-user experience. Built on a solid foundation of insurance domain expertise, proven technology and a heritage of successful deployments, Sapiens assists clients in identifying and eliminating IT barriers to achieve business objectives.

Benefits include:

- **Project delivery experience** – more than 35 years of field-proven project delivery of core system solutions, based on best practices and accumulated experience.
- **System integration** – we help our customers deploy modern solutions, while expertly integrating these solutions with their legacy environments that must be supported.
- **Global presence** – insurance and technology domain experts are located close to our customers to provide professional services.

Sapiens' implementation teams assist customers in building implementation plans, integrating our software solutions with their existing systems, and deploying specific requirements unique to each customer and installation. Sapiens' business services include API integration management and business intelligence (BI) and advanced analytics consolidation. Sapiens' managed services offer ongoing production support and a 24/7 help desk.

Sapiens' service teams possess strong technology skills and industry expertise. The level of service and business understanding they provide contributes to the long-term success of Sapiens customers. This helps Sapiens develop strategic relationships with their customers, enhances information exchange and deepens their understanding of the needs of companies within the industry.

Through Sapiens' service teams, Sapiens provides a wide scope of services and consultancy around their core solutions, both in the initial project implementation stage, as well as ongoing additional services. Many of Sapiens customers also use their services and expertise to assist them with various aspects of daily maintenance, ongoing system administration and the addition of new solution enhancements.

Such services include:

- Adding new lines of business and functional coverage to existing solutions running in production
- Ongoing support services for managing and administering the solutions
- Creating new functionalities, per specific requirements of our customers
- Assisting with compliance for new regulations and legal requirements

In addition, most of Sapiens' clients elect to enter into an ongoing maintenance and support contract with them. The terms of such a contract are usually twelve months and are renewed every year. A maintenance contract entitles the customer to technology upgrades (when made generally available) and technical support. Sapiens also offers introductory and advanced classes and training programs available at its offices and customer sites.

Sapiens Partners with several system integration and consulting firms to achieve scalable, cost-effective implementations for its customers. Sapiens has developed an efficient, repeatable methodology that is closely aligned with the unique capabilities of its solutions.

Sales and Marketing

Sapiens' main sales channel is direct sales, with a small portion of partner sales. Sapiens' sales team is dispersed across its regional offices in North America, the United Kingdom, Belgium, France, Israel, Australia, India, Poland and the Nordics. The direct sales force is geared to large organizations within the insurance and financial services industry.

In 2018, Sapiens continued to significantly invest in its target regions – North America, the UK, Europe and South Africa – and in its sales, presales, domain experts and marketing teams. We anticipate that the Sapiens sales team will leverage its proximity to customers and prospective clients to drive more business, and offer our services across our target markets.

Sapiens account managers were focused on building ongoing relationships with existing customers during the past year, to maintain a high level of customer satisfaction and identify up-selling opportunities within these organizations. We believe that a high level of post-contract customer support is important to Sapiens continued success.

As part of Sapiens sales process, Sapiens typically sells a package that includes a license, implementation, customization and integration services, and training services. All of Sapiens' clients for whom it has deployed its solutions elect to enter into an ongoing maintenance and support contract with Sapiens. We aim to expand Sapiens' distribution model to include more channel partners and system integrators, but we intend to maintain the direct sales model as Sapiens' prime distribution channel.

Sapiens' sales and marketing representatives attend major industry trade shows to improve Sapiens visibility and its market recognition. Additionally, Sapiens host client conferences– such as its annual Sapiens Client Conference, which took place in North Atlanta, U.S. in September 2016; in Lisbon, Portugal in October 2017; and in San Antonio, Texas, U.S. in 2018. We continue investing in our web presence and digital marketing activities to generate leads and enhance our brand recognition. As previously mentioned, Sapiens invested in its rebranding that included a new website that was launched in 2018 through early 2019. Sapiens maintains a blog channel (“Sapiens Spotlight”), and also invests in its working relationships and advisory services within the global industry-analyst community.

Sapiens works together with standards providers – such as ACORD and MISMO– to further enrich its offerings and provide its customers with comprehensive and innovative solutions that address the entire breadth of their business needs.

Geographically, Sapiens derived 47.1%, 44.4%, 4.6% and 3.9% of its revenue from North America, Europe, Asia-Pacific and South Africa regions, respectively, in the year ended December 31, 2018, and 40.7%, 44.9%, 6.7% and 7.7%, from those regions, respectively, in the year ended December 31, 2017.

Magic Software

Magic Software Enterprises Ltd. is a global provider of: (i) proprietary application development and business process integration platforms; (ii) selected packaged vertical software solutions; as well as (iii) a vendor of software services and IT outsourcing software services. Magic Software's technology is used by customers to develop, deploy and integrate on-premise, mobile and cloud-based business applications quickly and cost effectively. In addition, its technology enables enterprises to accelerate the process of delivering business solutions that meet current and future needs and allow customers to dramatically improve their business performance and return on investment. With respect to software services and IT outsourcing services, Magic Software offers a vast portfolio of professional services in the areas of infrastructure design and delivery, application development, technology consulting planning and implementation services, support services, cloud computing for deployment of highly available and massively-scalable applications and API's and supplemental outsourcing services. In addition, Magic Software offers a variety of proprietary comprehensive packaged software solutions through certain of our subsidiaries for (a) revenue management and monetization solutions in mobile, wireline, broadband and mobile virtual network operator/enabler, or MVNO/E (“Leap”); (b) enterprise management systems for both hubs and traditional air cargo ground handling operations from physical handling and cargo documentation through customs, seamless electronic data interchange, or EDI communications, dangerous goods, special handling, track and trace, security to billing (“Hermes”); (iii) enterprise human capital management, or HCM, solutions, to facilitate the collection, analysis and interpretation of quality data about people, their jobs and their performance, to enhance HCM decision making (“HR Pulse”); (iv) comprehensive systems for managing broadcast channels in the area of TV broadcast management through cloud-based on-demand service or on-premise solutions; and (vi) enterprise-wide and fully integrated medical platform (“Clicks”), specializing in the design and management of patient-file oriented software solutions for managed care and large-scale health care providers. This platform allows providers to securely access an individual's electronic health record at the point of care, and it organizes and proactively delivers information with potentially real time feedback to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers.

Based on Magic Software's technological capabilities, its software solutions enable customers to respond to rapidly-evolving market needs and regulatory changes, while improving the efficiency of their core operations. Magic Software have approximately 2,000 employees and operate through a network of over 3,000 independent software vendors, or ISVs, who we refer to as Magic Software Providers, or MSPs, and hundreds of system integrators, distributors, resellers, and consulting and OEM partners. Thousands of enterprises in approximately 50 countries use Magic Software's products and services.

Magic Software's software technology platforms consist of:

- **Magic xpa** – a proprietary application platform for developing and deploying business applications.
- **AppBuilder** – a proprietary application platform for building, deploying, and maintaining high-end, mainframe-grade business applications.
- **Magic xpi** – a proprietary platform for application integration.
- **Magic xpc** – hybrid integration platform as a service (iPaaS).

These software solutions enable Magic Software's customers to improve their business performance and return on investment by supporting cost-effective and rapid delivery integration of business applications, systems and databases. Using Magic Software's products, enterprises and MSPs can achieve fast time-to-market by rapidly building integrated solutions and deploy them in multiple environments while leveraging existing IT resources. In addition, Magic Software's software solutions are scalable and platform-agnostic, enabling its customers to build software applications by specifying their business logic requirements in a high-level language rather than in computer code, and to benefit from seamless platform upgrades and cross-platform functionality without the need to re-write their applications. Magic Software's platforms also support the development of mobile applications that can be deployed on a variety of smartphones and tablets, and in a cloud environment. In addition, Magic Software continuously evolves its platforms to include the latest technologies to meet the demands of its customers and the markets in which they operate.

Magic Software's software solutions enable enterprises to accelerate the planning, development, deployment and integration of on-premise, mobile and cloud business applications that can be rapidly customized to meet current and future needs. Its software solutions and complementary professional services empower customers to dramatically improve their business performance and return on investment by enabling the cost-effective and rapid delivery, integration and mobilization of business applications, systems and databases. Its technology and solutions are especially in demand when time-to-market considerations are critical, budgets are tight, and integration is required with multiple platforms or applications, databases or existing systems and business processes, as well as for RIA and SaaS applications. Magic Software's technology also provides the option to deploy our software capabilities in the cloud, hosted in a web services cloud computing environment. We believe these capabilities provide organizations with a faster deployment path and lower total cost of ownership. Magic Software's technology also allows developers to stage multiple applications before going live in production.

In recent years, the number of available enterprise applications has grown significantly which has led information system complexity within many organizations to a level that has obstructed business progress and evolution, reduced business agility and led to significantly higher costs. We believe this complexity will continue to increase in the future. Although it is not unusual for organizations to operate multiple applications, systems and platforms that were created utilizing disparate programming languages, the complexity of these environments typically reduces an organization's operating flexibility, hinders decision-making processes and leads to costly inefficiencies and redundancies. When organizations seek to swiftly change, update and upgrade IT assets to support new business processes or to cope with changes in business and regulatory environments, they often find that the introduction and integration of new or upgraded business applications is more complex than expected, requires significant implementation resources, takes a long time to implement and is costly. The proliferation of smartphones and mobile platforms necessitates device-independent and future-proof business solutions for fast, simple, and cost-effective mobile deployment. In addition, new cloud computing technologies present enterprises with an opportunity to realize greater agility and meaningful cost savings to businesses, creating a growing need for further changes to enterprises' IT applications and systems.

Based on Gartner, Inc., or Gartner, a leading research and advisory firm providing information technology related insight, despite uncertainty fueled by recession rumors, Brexit, and trade wars and tariffs, the likely scenario for IT spending in 2019 is growth, with the global enterprise information technology market growing by 3.9% in 2018 and expected growth for 2019 and 2020 of 3.2% (to \$3.76 trillion) and 2.8%, respectively (Gartner, Worldwide IT Spending Forecast, Q4.18 Update, January 2019). The market consists of five primary components, including communication services, IT services, devices, enterprise software and data center systems. The IT services segment represented \$983 billion (26.9%) of the overall IT spending in 2018, and 27.3% of the total expected market opportunity in 2019. The enterprise software segment represented \$397 billion (10.9%) of overall IT spending in 2018, and 11.4% of the total expected market opportunity in 2019. Gartner also reports that ongoing spending to support digitalization initiatives in areas such as bimodal IT and customer experience underlies strength in application markets (Gartner Forecast Alerts: IT Spending, Worldwide, Q418 Update).

The pace of digital transformation is also accelerating at companies all around the world. Customers are increasingly demanding an all-digital experience from the companies they do business with. They seek instant gratification through real-time updates or instant customer service without having to talk to or wait for other human beings. Employees are also pushing for a more digital experience in their workplaces. The confluence of these internal and external forces is causing companies of all sizes to put digital transformation goals at the top of the agenda. It is becoming clearer that companies will need to embrace and prioritize the creation of a digital operating environment to gain a competitive edge and be able to recruit and maintain a talented employee base. The confluence of these internal and external forces is causing companies of all sizes to put digital transformation goals at the top of the agenda. It is becoming clearer that companies will need to embrace and prioritize the creation of a digital operating environment to gain a competitive edge and be able to recruit and maintain a talented employee base.

Although the market for low-code development platforms is not new by any means, it has certainly started to gain more traction over the past couple of years and is expected to continue its strong growth as the gap between the important role of software at large enterprises and the lack of software skills in the market continues to widen. Forrester expects the market to increase to \$21.2 billion by 2022, up from \$3.8 billion in 2017, a CAGR of 41%. Some of the highest-growth years for the market are expected to be between 2019 and 2021, where growth is expected to be over 50%.

Manual coding and application development is a complex and time-consuming process with an end result that is not guaranteed. The process requires constant iteration as bugs are discovered and new features are integrated. In addition, the communication gap and general disconnect between developers and end-users are critical shortcomings of manual coding that results in business applications that are less than ideally designed. Many of these problems can be addressed by low-code and no-code development platforms. The enterprise application development software market consists of several application development sub-segments and includes large dominant players such as IBM, Microsoft, Oracle, Salesforce.com, HP, CA Technologies and Compuware as well as a large number of highly specialized vendors, with focused capabilities for specific vertical markets. Huge backlogs of enterprise app development work and growing demand for apps coupled with shortage and expense of skilled programmers, is increasingly leading enterprises to turn to low-code/no-code application development platforms that democratize the development process and give business users the ability to develop applications themselves with minimal or no assistance from IT. Through the adoption of business applications, these business users are increasingly looking for ways to automate manual workflows and become more efficient and effective by reallocating their time to solving more complex business problems. Even IT resources and developers are using low-code development tools to increase their development speed and reduce backlog, a growing market for low-code/no-code development platforms.

Magic xpa, AppBuilder, Magic xpi and Magic xpc provide MSPs with the ability to rapidly build integrated applications in a more productive manner, deploy them in multiple modes and architectures as needed, lower IT maintenance costs and speed time-to-market. Magic Software's solutions are comprehensive and industry proven. These technologies can be applied to the entire software development market, from the implementation of micro-vertical solutions, through tactical application modernization and process automation solutions, to enterprise spanning service-oriented architecture, or SOA, migrations and composite applications initiatives. Unlike most competing platforms, Magic Software offer a coherent and unified toolset based on the same proven metadata driven and rules-based declarative technology. Its low-code, metadata platforms consist of pre-compiled and pre-written technical and administrative functions, which are essentially ready-made business application coding that enables developers to bypass the intensive technical code-writing stage of application development and integration, concentrate on building the correct logic for their apps and move quickly and efficiently to deployment. Through the use of metadata-driven platforms such as Magic xpa, AppBuilder, Magic xpi and Magic xpc, software vendors and enterprise customers can experience unprecedented cost savings through fast and easy implementation and reduced project risk.

Magic Software's software technology solutions include application platforms for developing and deploying specialized and high-end large-scale business applications and integration platforms that allow the integration and interoperability of diverse solutions, applications and systems in a quick and efficient manner. These solutions enable its customers to improve their business performance and return on investment by supporting the affordable and rapid delivery and integration of business applications, systems and databases. Using Magic Software's software solutions, enterprises and ISVs can accelerate time-to-market by rapidly building integrated solutions, deploying them in multiple environments while leveraging existing IT resources. In addition, its solutions are scalable and platform-agnostic, enabling Magic Software's customers to build solutions by specifying their business logic requirements in a commonly used language rather than in computer code, and to benefit from seamless platform upgrades and cross-platform functionality without the need to re-write applications. Magic Software's technology also enables future-proof protection and supports current market trends such as the development of mobile applications that can be deployed on a variety of smartphones and tablets, and cloud environments.

The underlying principles and purpose of Magic Software's technology are to provide:

- **Simplicity** – the use of code-free/low code development tools instead of hard coding and multiple programming languages;
- **Business focus** – the use of pre-compiled business logic and components eliminates repetitive, low level technical and coding tasks;
- **Comprehensiveness** – the use of a comprehensive development and deployment platform offers a full end-to-end development, deployment and integration capability;
- **Automation of mundane tasks** – to accelerate development and maintenance and reduce risk; and
- **Interoperability** – to support business logic across multiple hardware and software platforms, operating systems and geographies.

In addition, Magic Software also offers a variety of vertical-targeted products that are focused on the needs and requirements of specific growing markets. Certain of these products were developed utilizing Magic Software's application development platform.

Magic Software's vertical software solutions include:

- *Clicks*, offered by Magic Software's Roshtov subsidiary: The Clicks is a proprietary comprehensive core software solution for medical record information management systems, used in the design and management of patient-file for managed care and large-scale healthcare providers. The platform is connected to each provider clinical, administrative and financial data base system, residing at the provider's central computer, and allows immediate analysis of complex data with potentially real-time feedback to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers;
- *Leap™*, offered by Magic Software's Formula Telecom Solutions subsidiary: The Leap™ is a proprietary comprehensive core software solution for BSS, including convergent charging, billing, customer management, policy control, mobile money and payment software solutions for the telecommunications, content, Machine to Machine/Internet of Things or M2M/IoT, payment and other industries;
- *Hermes Solution*, offered by Magic Software's Hermes Logistics Technologies Ltd. subsidiary: The Hermes Air Cargo Management System is a proprietary, state-of-the-art, packaged software solution for managing air cargo ground handling. Hermes Solution covers all aspects of cargo handling, from physical handling and cargo documentation through customs, seamless EDI communications, dangerous goods and special handling, tracking and tracing, security and billing. Customers benefit through faster processing and more accurate billing, reporting and ultimately enhanced revenue. The Hermes Solution is delivered on a licensed or fully hosted basis. Hermes recently supplemented its offering with the Hermes Business Intelligence (HBI) solution, adding unprecedented data analysis capabilities and management-decision support tools;
- *HR Pulse*, offered by Magic Software's Pilat NAI, Inc. and Pilat Europe Ltd. subsidiaries: The Pulse (now in its 10th release) is a proprietary tool for the creation of customizable HCM solutions quickly and affordably. It has been used by Pilat to create products, such as Pilat Frist and Pilat Professional, that provide "out of the box" SaaS solutions for organizations that implement Continuous Performance and/or Talent Management, and
- *MBS Solution*, offered by Magic Software's Complete Business Solutions Ltd. subsidiary: MBS Solution is a proprietary comprehensive core system for managing TV broadcast channels.

In addition, Magic Software provides a broad range of advanced IT software professional services and IT outsourcing services in the areas of infrastructure design and delivery, end-to-end application development, technology planning and implementation services, cloud computing for deployment of highly available and massively-scalable applications and APIs, as well as supplemental IT outsourcing services to a wide variety of companies, including Fortune 1000 companies. The technical personnel Magic Software provides generally supplement in-house capabilities of its customers. Magic Software has extensive and proven experience with virtually all types of telecom infrastructure technologies in wireless and wire-line as well as in the areas of infrastructure design and delivery, application development, project management, technology planning and implementation services.

Magic Software has identified the following trends that are relevant to the markets we operate in:

- **Increasingly complex business integration:** In recent years, enterprises operate multiple applications and platforms, using various programming languages, resulting in complex enterprise information systems. Such systems and the ability to swiftly change, update, and upgrade them to support new business processes are crucial to the enterprise's ability to cope with changes in the business, economic and regulatory environment. However, the introduction and integration of new business applications is complex, requires significant time and human resources and entails significant and often unpredicted costs. Therefore, enterprises are in need of solutions that will facilitate the rapid and seamless deployment of business applications.
- **Reusing IT assets/enterprise applications:** In an increasingly dynamic technology, business and economic environment, organizations face mounting pressure to continue to leverage their large IT investments in enterprise applications, such as ERP and CRM, while increasing their ability to change business processes and support new ones. Tools to support lightweight yet rapid, iterative and modular development methodologies, reusable architectures and application life-cycle management are primary drivers for spending on application development worldwide.
- **Enterprise mobility:** With the proliferation of smartphones and mobile platforms that support enterprise mobility, enterprise users now expect instant access to real-time information, a rich user experience, seamless integration with various enterprise systems and support to multiple mobile devices. As such, enterprises need to be able to develop device-independent and robust business solutions for fast and cost-effective mobile deployment.
- **Cloud, Platform-as-a-Service and Software-as-a-Service:** Cloud, Platform-as-a-Service (PaaS) and Software-as-a-Service (SaaS) are each becoming a well-established phenomenon in some areas of enterprise IT. Cloud-hosted applications continue to grow as alternatives to internally managed systems as they deliver greater agility and meaningful cost savings to businesses. In addition, fast time-to-deployment, low cost-of-entry, and adoption of pay-as-you-go models drive growing adoption of SaaS applications. In turn, SaaS applications enable the rapid construction, deployment and management of some custom-built applications accessed as a service in the cloud. With more SaaS deployments, the need for integration tools that bridge the cloud apps with on-premise application increases.

- **Big Data:** The amount of digital information that is being generated by enterprises each year, across a number of diverse data sources and formats, is growing rapidly. Enterprises are required to retain, process and analyze data to attain meaningful insights and gain competitive advantages, and therefore require versatile and flexible tools in order to quickly and reliably process these increasingly large amounts of data.
- **IT Consulting:** The typical software-based projects of IT consulting have been gradually shifting towards software and technology-driven solutions that can be embedded into clients' systems, providing ongoing engagement services.
- **Sourcing processes:** The need for a faster go-to-market process as well as constrained resources in IT departments is resulting in greater influence by specific business units on the purchasing decision as opposed to the traditional sourcing process. The traditional outsourcing business model of capacity on demand is also transitioning towards a model of capability on demand. Information technology service buyers are increasingly looking at outcome-driven managed services with a tighter integration between software, service and infrastructure.
- **Mobility & IT skills shortage:** Growth in mobility skills demand is outpacing organizations' ability to keep up, resulting in mobile strategists facing a skills shortage across the entire mobility ecosystem, with mobile application development skills in greatest demand. Poor availability of skilled staff is driving mobile strategists to outsource many functions across the mobility ecosystem, including application development and testing services. The increasing mobility skills gap will force mobile strategists to use a multifaceted application development and delivery approach.

Magic Software Platforms

Magic xpa Application Platform, Magic Software's metadata driven application platform, provides a simple, code-free and cost-effective development and deployment environment that lets organizations and MSPs quickly create user-friendly, enterprise-grade, multi-channel mobile and desktop business apps that employ the latest advanced functionalities and technologies. The Magic xpa Application Platform, formerly named uniPaaS, was first released in 2008 and is an evolution of the original eDeveloper product a graphical, rules-based and event-driven framework that offered a pre-compiled engine for database business tasks and a wide variety of generic runtime services and functions which was released in 2001.

Magic Software has continually enhanced its Magic xpa application platform to respond to major market trends such as the growing demand for cloud based offerings including Rich Internet Applications (RIA), mobile applications and SaaS. Accordingly, Magic Software has added new functionalities and extensions to its application platform, with the objective of enabling the development of RIA, SaaS, mobile and cloud enabled applications. SaaS is a business and technical model for delivering software applications, similar to a phone or cable TV model, in which the software applications are installed and hosted in dedicated data centers and users subscribe to these centers and use the applications over an internet connection. This model requires the ability to deliver RIA. Magic xpa is a comprehensive RIA platform. It uses a single development paradigm that handles all ends of the application development and deployment process including client and server partitioning and the inter-communicating layers.

Magic xpa offers customers the power to choose how they deploy their applications, whether full client or web; on-premise or on-demand; in the cloud or behind the corporate firewall; software or mobile or SaaS; global or local. The Magic xpa Application Platform complies with event driven and service oriented architectural principles. By offering technology transparency, this product allows customers to focus on their business requirements rather than technological means. The Magic xpa single development paradigm significantly reduces the time and costs associated with the development and deployment of cloud-based applications, including RIAs, mobile and SaaS. In addition, application owners can leverage their initial investment when moving from full client mode to cloud mode, and modify these choices as the situation requires. Enterprises can use cloud based Magic xpa applications in a SaaS model and still maintain their databases in the privacy of their own data centers. It also supports most hardware and operating system environments such as Windows, Unix, Linux and AS/400, as well as multiple databases and is interoperable with .NET and Java technologies.

Magic xpa can be applied to the full range of software development, from the implementation of micro-vertical solutions, through tactical application modernization and process automation solutions, to enterprise spanning SOA migrations and composite applications initiatives. Unlike most competing platforms, Magic Software offers a coherent and unified toolset based on the same proven metadata driven and rules based declarative technology, resulting in increased cost savings through fast and easy implementation and reduced project risk.

In November 2017, Magic Software announced the release date of its newest cutting-edge Web development tool, a full Web client, for Magic xpa Application Platform. By entering the Composite Web Application market, Magic Software addressed its customers' and partners' need for Single Web Application development, providing its loyal customers with access to the newest and most advanced programing frameworks, enabling them to leverage these new capabilities to quickly and efficiently develop high-quality applications. The new HTML5 Web client, based on Google's popular open source Angular framework, will become commercially available in June 2018, providing Magic Software's developer community with advanced capabilities to develop highly-responsive and device-agnostic Web applications. In addition, Magic Software plans to enable Web services to be consumed and provided via Apache Axis2, which will provide its customers a modern state-of-the-art Web services framework. In addition, Magic Software further modernized its Integrated Development Environment (IDE) by moving toward a full-fledged Visual Studio-based studio, offering its users an even more intuitive and user-friendly experience.

Magic Software's new enhancements will also include a 64-bit based engine, support for cloud databases and easy usage of JSON files. The product will also provide a more seamless and easier integration with Java, similar to the already existing integration with .NET, making the Magic xpa platform even more robust.

During 2017, Magic xpa was listed in Gartner's Market Guide for Application Platforms report. In addition, Magic xpa was listed in the Forrester Wave™ for Mobile Low-Code Development Platforms. During 2016, Magic xpa was listed in three of Gartner's Market Guide Reports for: Rapid Mobile App Development Tools; Application Platforms and High Productivity Development Tools. In addition, Magic xpa was listed in Forrester's Vendor Landscape, "The Fractured Fertile Terrain of Low Code Application Platforms."

In February 2018, Magic Software released Magic xpa 3.3 with a more seamless and easier integration with Java, similar to the already existing integration with .NET, making the Magic xpa platform even more robust. Along with that, we provided a new WS provider mechanism, built on Apache Axis2, enhancing our current WCF based capabilities.

In August 2018, Magic Software released Magic xpa 4.0 with its new Angular-based web application framework that provides developers and Angular developers with the power to develop device-agnostic and feature-packed Web applications. Magic xpa 4.0 decouples the business logic from the presentation of the apps providing developers with the flexibility to use the Angular open-source platform with industry-standard state-of-the-art technologies, including HTML5, CSS, and JavaScript for designer-quality screens, while benefiting from the productivity, security, and scalability capabilities provided by our low-code development platform.

In addition, Magic Software's 2019 roadmap includes the release of a 64-bit edition of Magic xpa, featuring a full 64-bit runtime engine for Windows and Linux.

AppBuilder Application Platform is a proprietary development environment used for managing, maintaining and reusing complicated applications needed by large businesses. It provides the infrastructure for enterprises worldwide, across several industries, with applications running millions of transactions daily on legacy systems. Enterprises using AppBuilder can build, deploy and maintain large-scale custom-built business applications for years without being dependent on any particular technology. The AppBuilder deployment environments include IBM mainframe, Unix, Linux and Windows. AppBuilder is intended to increase productivity and agility in the creation and deployment of enterprise class computing.

AppBuilder follows the 4GL development paradigm to help enterprises focus on the business needs and definition and overlook technical hurdles. AppBuilder developers define the business roles and prior to deployment the code is generated from the development environment to the required run time environment. Several large MSPs have utilized AppBuilder to build state-of-the-art applications that are deployed through many large customers.

AppBuilder implements a model driven architecture approach to application development. It provides the ability to design an application at the business modeling level and generate forward to an application. AppBuilder has a platform-independent, business-rules language that enables generation to multiple platforms. It is possible to generate the client part of an application as Java and the server part as COBOL. As businesses change, the server part can be generated as Java without changing the application logic. Only a simple configuration option needs to be changed.

In 2016, AppBuilder launched the next generation of its group repository tool, the Versioned Group Repository (VGRE). AppBuilder VGRE is aimed at mid-size development projects, runs on Microsoft Windows Server platform and enables AppBuilder enterprise customers to parallel support for multiple application releases, called branches, and access to the full history of individual objects. This includes comparisons as well as version manipulation features like merge. VGRE is an extension to the existing repository portfolio with full backward compatibility including well known features like impact analysis, security, upload/download, migrations, rebuilds, remote preparation and others.

Magic xpi Integration Platform is a graphical, wizard-based code-free solution delivering fast and simple integration and orchestration of business processes and applications. Magic xpi allows businesses to more easily view, access, and leverage their mission-critical information, delivering true enterprise application integration, or EAI, business process management, or BPM, and SOA infrastructure. Increasing the usability and life span of existing legacy and other IT systems, Magic xpi allows fast EAI, development and customization of diverse applications, systems and databases, assuring rapid return on invested capital and time-to-market, increased profitability and customer satisfaction.

Magic xpi allows the integration and interoperability of diverse solutions, including legacy applications, in a quick and efficient manner. In January 2010, Magic Software released Magic xpi 3.2 and since then it has continued to develop the Magic xpi channel. Magic Software has entered into agreements with additional system integrators, consultancies and service providers, who acquired Magic xpi skills and offer Magic xpi licenses and related services to their customers. Magic Software also offers special editions of Magic xpi with optimized and certified connectors for specific enterprise application vendor ecosystems, such as SAP, Oracle JD Edwards, Microsoft SharePoint and Salesforce.com. These special editions contain specific features and pricing tailored for these market sectors.

In March 2017, Magic Software released Magic xpi version 4.6 with enhancements including a New ServiceMax connector for quick and easy connectivity with ServiceMax, a New OData client connector for easy connectivity to ecosystems exposing services via this open standardized protocol, a SAP Business One connector verified for SAP Business One HANA and support for additional services and new and improved functionalities to Magic Software's existing MS Dynamics CRM connector.

In August 2017, Magic Software's Magic xpi integration platform was recognized by the analyst firm Ovum as a well-positioned integration platform that is a good option for small-and medium-size enterprises. In addition, Magic xpi was listed in 2017 in 10 Gartner reports including three Market Guides for Application Integration Platforms, HIP-Enabling Technologies and IoT Integration.

In March 2018, Magic Software released Magic xpi version 4.7 with a new OData Provider connector, Active Directory Federation Services (ADFS) support for the SharePoint Online (MOSS) connector. This version provides the ability to write new connectors based on Magic xpa Application Platform's runtime technology and multiple features to improve programming productivity, such as visual indicators of data flow status and an enhanced monitor to provide an even more accurate bird's eye view of all running projects.

In October 2018, Magic Software announced that Magic xpi Integration Platform 4 achieved SAP-certified integration with SAP S/4HANA, enabling our customers to optimize business processes through automation across leading ERP, CRM, finance, and other enterprise systems using a single platform.

In February 2019, Magic Software released Magic xpi version 4.9 with a new REST client connector, ODATA connector enhancements, inherent UPSERT support in the data mapper, and built-in cloud support.

Magic xpc Integration Platform

In November 2017, Magic Software announced the expansion of its integration offering with the launch of Magic xpc, a hybrid integration platform as a service (IPaaS), which enables customers to accelerate digital transformation on the cloud, on-premises or on both.

Magic xpc is powered by its out-of-the-box integration connectors for mainstream business applications, databases, protocols and tools for building custom integrations. Magic Software's iPaaS platform was built using node.JS and docker technology. Magic xpc users can monitor their integration flows and create and manage alerts from a single interface. Built on top of open-source components with no cloud vendor lock-in, Magic xpc is available on both public and private cloud platforms including, Amazon Web Services, Azure, and Google Cloud.

Magic Software - vertical-software solutions

- **Clicks.** Magic Software markets Clicks™ through its Roshtov subsidiary, which has three decades of proven experience based on its proprietary comprehensive core software solution for medical record information management systems, used in the design and management of patient-file for managed care and large-scale healthcare providers. The platform, which can be tailor-made to the specific needs of the healthcare providers is connected to the clinical, administrative and financial data base system, residing at the provider's central computer, and allows immediate analysis of complex data with potentially real-time feedback to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers.

All of Magic Software's clients that buy or subscribe to its Clicks software solutions also enter into software support agreements with us for maintenance and support of their medical record management systems. In addition to immediate software support in the event of problems, these agreements allow clients to access new releases covered by support agreements. In addition, each client has 12-hour access, six days a week (6 hours on Friday) to the applicable call-center support teams.

Roshtov's employs a team of 30 research and development specialists that together with its clients create a future where the health care system works to improve the well-being of individuals and communities. Roshtov's proven ability to innovate has led to what we believe to be an industry leading architectures and a breadth and depth of solutions and services.

There are four healthcare service providers in Israel, two (Maccabi Healthcare Services and Clalit) of which are the largest healthcare providers in Israel and are our customers since the early 1990's, and which account for 77% of the Israeli market.

- **Leap.** Magic Software markets Leap™ through its FTS subsidiary, which has over 20 years of BSS experience, based on dozens of projects delivered to customers worldwide. Magic Software implements revenue management and monetization solutions in mobile, wireline, broadband, MVNO/E, payments, e-commerce, M2M / Internet of Things, mobile money, cable, cloud and content markets under the brand name of Leap™.

FTS works with telecommunications, content and payment service providers globally to help them manage complex transactions and relationships with greater flexibility and independence. Analyzing transactions from a business standpoint, FTS offers end-to-end and add-on telecom billing, charging, policy control and payments solutions to customers worldwide, and services both growing and major providers.

FTS targets mid to lower level tier service providers, supporting their BSS needs with end-to-end, turnkey billing and other BSS projects. In addition, FTS offers upper-tiers of service providers with BSS and monetization solutions for specific needs, including policy control and charging solutions, M2M billing, billing for content services, MVNE/MVNO billing, mobile money software solutions, payment and mobile financial services solutions and others.

FTS's solutions are delivered via cloud, on-premises or in a fully managed-services mode and are backed by FTS's Israel and Bulgaria-based experienced professional services support team.

- **HR Pulse.** HR Pulse, which is now in its 10th release, is a proprietary platform that creates and customizes software applications for HCM, with the goal to combine technology with effective processes, to facilitate the collection, analysis and interpretation of quality data about people, their jobs and their performance, to enhance HCM decision making, resulting in increased organizational efficiency and effectiveness. HR Pulse addresses four distinct functional areas with the ability to also work as one consolidated system:
 - Performance and goal management
 - Development management
 - Talent management and succession planning
 - Compensation and merit review

Magic Software's offering includes customizable "out-of-the-box" HCM SaaS Solutions, such as Pilat Frist and Pilat Professional, which provide a menu of templates that can be used to affordably and expeditiously create customized HCM solutions for companies. The HR Pulse platform promotes the building and implementation of solutions that address broader business challenges as well. Such offerings include 360 degree feedback, employee surveys, leadership and management development, coaching and job evaluation.

- **Hermes.** Hermes has been developing and evolving cargo management systems for the air cargo industry since 2002. Hermes Air Cargo Management System is a proprietary, state-of-the-art, packaged software solution for managing air cargo ground handling. Hermes software covers all aspects of cargo handling, from physical handling and cargo documentation through customs, seamless EDI communications, dangerous goods and special handling, tracking and tracing, security and billing. Over the last 10 years Hermes systems have been implemented in over 70 terminals on five continents, providing efficient and accurate handling of more than 5 million tons of freight annually. Customers benefit through faster processing and more accurate billing, reporting and ultimately enhanced revenue. Customers include independent ground handlers, airlines with a cargo arm, hubs belonging to an individual airline or those catering to a number of airlines transiting cargo to additional destinations. The Hermes solution is delivered on a licensed or fully hosted basis. Hermes recently supplemented its offering with the Hermes Business Intelligence (HBI) solution, adding unprecedented data analysis capabilities and management-decision support tools.

Product-Related Services

Professional Services. Magic Software offers fee-based consulting services in connection with installation assurance, application audits and performance enhancement, application migration and application prototyping and design. Consulting services are aimed at generating both additional revenues and ensuring successful implementation of Magic xpa, Appbuilder, Magic xpi and Magic xpc projects through knowledge transfer. As part of management efforts to focus on license sales, Magic Software's goal is to provide such activities as a complementary service to its customers and partners. We believe that the availability of effective consulting services is an important factor in achieving widespread market acceptance.

Services are offered as separately purchased add-on packages or as part of an overall software development and deployment technology framework. Over the last several years, Magic Software has built upon its established global presence to form business alliances with MSPs that use Magic Software technology to develop solutions for their customers, and with distributors to deliver successful solutions in focused market sectors.

Maintenance. Magic Software offers its customers annual maintenance contracts providing for unspecified upgrades and new versions and enhancements for its products on a when-and-if-available basis for an annual fee.

Customer Support. Magic Software offers an online support system for the MSPs, providing them with the ability to instantaneously enter, confirm and track support requests via the Internet. This system supports MSPs and end-users worldwide. As part of this online support, Magic Software offers a Support Knowledge Base tool providing the full range of *technical* notes and other documentation including technical papers, product information, most answers to most common customer queries and known issues that have already been reported.

Training. Magic Software conducts formal and organized training on its development tools. Magic Software develops courses, pertaining to its principal products, Magic xpa and Magic xpi, and provides trainer and student guidebooks. Course materials are available both in traditional, classroom courses and as web-based training modules, which can be downloaded and studied at a student's own pace and location. The courses and course materials are designed to accelerate the learning process, using an intensive technical curriculum in an atmosphere conducive to productive training.

Magic Software - IT Services

The IT services segment of the market is comprised of a broad array of specific segments such as infrastructure design and delivery, application development, technology consulting planning and implementation services, support services and supplemental outsourcing services. In addition, IT professional services include quality assurance, product engineering services and process consulting. The IT services segment is also undergoing a profound transition, with some key trends that have accelerated recently. Growing demand for mobile and cloud-based applications as well as Big Data solutions also entails more complex IT development and integration projects which management and implementation require a higher level of expertise. In addition, the typical software-based projects of IT consulting have been gradually shifting towards software and technology-driven solutions that can be embedded into clients' systems, providing ongoing engagement services. This transition has been accentuated by an underlying change in IT services sourcing processes: the need for a faster go-to-market process as well as constrained resources in IT departments is resulting in greater influence by specific business units on the purchasing decision as opposed to the traditional sourcing process. The traditional outsourcing business model of capacity on demand is also transitioning towards a model of capability on demand. Information technology service buyers are increasingly looking at outcome-driven managed services with a tighter integration between software, service and infrastructure.

Magic Software's IT services offerings consist of a variety of professional services that can be grouped into integration and other IT services. Magic Software's integration services include:

- **Infrastructure analysis, design and delivery** - management of complex, tailor-made projects and telecom infrastructure projects in wireless and wire-line as well as IT consulting services, mainly for the defense and public sectors.
- **Technology consulting and implementation services** - planning and execution of end-to-end, large-scale, complex solutions in networking, cyber security, command & control and high performance transaction systems.
- **Application development** – Magic Software specializes in end-to-end projects that feature an array of technologies, from development and implementation of concepts for startups to overall responsibility for the development of systems for large enterprises. Magic Software's development services include development of on-premise, mobile and cloud applications as well as Embedded and real time software development.

With more than 1,700 experts and hundreds of projects gone live in a variety of advanced technologies in the U.S., Europe and Israel, Magic Software has developed significant expertise and accumulated vast experience in integration projects. Such projects are typically more complex and require a high level of industry knowledge and highly skilled professionals. Magic Software's integration expertise, as well as its global reach allows it to deliver comprehensive, value added services to its customers. Its IT services customers include major global telecoms, OEMs and engineering, furnish and installation service companies.

Strategic Consulting and Outsourcing Services

Magic Software provides a broad range of IT consulting services in the areas of infrastructure design and delivery, application development, technology planning and implementation services, DevOps (Development & Operations), Mobile, Big Data and Analytical BI, M/F, cloud computing for deployment of highly available and massively-scalable applications and APIs, as well as supplemental outsourcing services. Its wholly-owned subsidiaries, Fusion Solutions LLC, Xsell Resources Inc., Allstates Consulting Services LLC, Futurewave Systems, INC., the Comm-IT Group, Infigny Solutions LLC., Comblack Ltd. and Shavit Software (2009) Ltd. provide advanced IT consulting and outsourcing services to a wide variety of companies including Fortune 1000 companies. Magic Software's technical personnel generally supplement the in-house capabilities of its customers. Its approach is to make available a broad range of technical personnel to meet the requirements of its customers rather than focusing on specific specialized areas. Magic Software has extensive knowledge of and has worked with virtually all types of wireless and wireline telecom infrastructure technologies as well as in the areas of infrastructure design and delivery, application development, project management, technology planning and implementation services. Its consulting partners come from a wide range of industries, including finance, insurance, government, health care, logistics, manufacturing, media, retail and telecommunications. With an experienced team of recruiters in the telecom and IT areas and with a substantial and a growing database of telecom talent, Magic Software can rapidly respond to a wide range of requirements with well qualified candidates. Its customer list includes major global telecoms, OEMs and engineering, furnish and installation service companies. Magic Software has built long-term relationships with its customers by providing expert telecom talent. Magic Software provides individual consultants for contract and contract-to-hire assignments as well as candidates for full time placement. In addition, Magic Software configures teams of technical consultants for assigned projects at its customers' sites.

Sales, Marketing and Distribution

Magic Software sells its solutions and services globally through its own direct sales representatives and offices and through a broad sales distribution network, including independent country distributors, independent service vendors that use Magic Software's technology to develop and sell solutions to their customers, and system integrators. Magic Software also offers software maintenance, support, training, and consulting services in connection with its products, thus aiding the successful implementation of projects and assuring successful operation of the platforms once installed. Magic Software sells its integration solutions to customers using specific popular software applications, such as SAP, Salesforce.com, IBM i (AS/400), Oracle JD Edwards, Microsoft SharePoint, Microsoft Dynamics, SugarCRM and other eco-systems. As such, Magic Software enjoys a well-diversified client base across geographies and industries including oil & gas companies, telecommunications groups, financial institutions, healthcare providers, industrial companies, public institutions and international agencies.

As of December 31, 2018, Magic Software had approximately 140 sales personnel, including a team of sales engineers who provide pre-sale technical support, presentations and demonstrations in order to support its sales force.

Direct Sales. For Magic xpa and AppBuilder, Magic Software's direct sales force pursues software solution providers and enterprise accounts. Magic Software's sales personnel carry out strategic sales with a direct approach to decision makers, managing a constantly monitored consultative type of sales cycle. Magic xpi and Magic xpc are mostly sold through indirect channels and through Magic Software's ecosystem business relationships, but Magic Software has some direct customers with integration needs.

Indirect Sales. Magic Software maintains an indirect sales channel, through its ecosystem business relationships, as well as through system integrators, value added distributors and resellers, OEM partners, as well as consultancies and service providers. Magic Software maintains an indirect sales channel for Magic xpa through MSPs and system integrators, who use its application and integration platforms to develop and deploy different applications for sale to their end-user customers.

Distributors. In general, Magic Software distributes its products through regional non-exclusive distributors in those countries where it does not have a sales office. A regional distributor is typically a software marketing organization with the capability to add value with consulting, training and support. Distributors that are also MSPs are generally responsible for the implementation of both Magic Software's application platform and business and process integration suite and localization into the distributors' native languages. The distributors also translate Magic Software's marketing literature and technical documentation. Distributors must undergo Magic Software's program of sales and technical training. Marketing, sales, training, consulting, product and customer support are provided by the local distributor. Magic Software is available for backup support for the distributors and for end-users. In coordination with the local subsidiaries and distributors, Magic Software also provides sales support for large and multinational accounts. Magic Software has 44 distributors in Europe, Latin America and Asia, many of whom are also MSPs.

VARs. In general, Magic Software resells its products through VARs that extend their capabilities with its offerings. These include SAP VARs.

Michpal

Michpal, an Israeli registered company, is a developer of proprietary, on-premise payroll software solution for processing traditional payroll stubs to Israeli enterprises and payroll service providers. Michpal also developed several complementary modules such as attendance reporting, which are sold to its customers for additional fees. As of December 31, 2018, Michpal serves approximately 8,000 customers, most of which are long-term customers.

As part of its payroll software solution Michpal allows the preparation of employee paychecks, pay statements, supporting journals, summaries, and management reports and supports monthly and year-end regulatory and legislative payroll tax statements and other forms such as payroll social and income taxes, to its clients and their employees. In addition, Michpal enables its clients to connect to certain major enterprise resource planning, or ERP, applications with a certified connector

In January 2018, Michpal released its new product and a new service line – “Michpal Pension” and “Michpal PensionPlus”, respectively, which led to a 25% increase in revenues of Michpal year over year. These solutions enable all Israeli employers to digitally report their employees’ pension fund payments to their respective pension funds as required by Israeli law (this requirement took effect on February 1, 2018 for employers who employ more than 21 employees and on February 1, 2019 for employers who employ more than 10 employees).

In November 2018, Michpal expanded its business through the acquisition of an 80% share interest in Effective Solutions Ltd., an Israeli company that provides consulting services in the fields of operational cost savings and procurement, as well as salary control and monitoring. The two companies have launched, in November 2018, a new service called ‘Michpal YEDA’, adopted by more than 50% of Michpal’s customers, which allows clients to consult with team of experienced professionals, including employment attorneys and HR experts, with respect to payroll, labor, pensions, social security and employee income tax matters.

In January 2019, Michpal launched a supplement service line, “Michpal 360”, specially tailored for payroll service providers, allowing them to offer their clients to digitally report their employees’ pension fund payments to their respective pension funds as required by law.

InSync

InSync is a US based national supplier of employees to Vendor Management Systems (VMS) Workforce Management Program accounts. InSync specializes in providing professionals in the following areas: Accounting and Finance, Administrative, Customer Service, Clinical, Scientific and Healthcare, Engineering, Manufacturing and Operations, Human Resources, IT Technology, LI/MFG, and Marketing and Sales. With an experienced team of IT recruiters, InSync can rapidly respond to a wide range of requirements with well-qualified candidates. InSync currently supports more than 30 VMS program customers with employees in over 40 states.

Our Affiliated Company

TSG

TSG is a global high technology company engaged in high-end technical solutions for protecting the safety of national borders, improving data gathering mechanisms, and enhancing communications channels for military, homeland security and civilian organizations.

TSG operates primarily in the defense and homeland security arenas. The nature of military and homeland security actions in recent years, including low intensity conflicts and ongoing terrorist activities, as well as budgetary pressures to focus on leaner but more technically advanced forces, have caused a shift in the defense and homeland security priorities for many of TSG’s major customers. As a result, TSG believes there is a continued demand in the areas of command, control, communications, computer and intelligence (C4I) systems, intelligence, surveillance and reconnaissance (ISR) systems, intelligence gathering systems, border and perimeter security systems, cyber-defense systems. There is also a continuing demand for cost effective logistic support and training and simulation services. TSG believes that its synergistic approach of finding solutions that combine elements of its various activities positions it to meet evolving customer requirements in many of these areas.

TSG tailors and adapts its technologies, integration skills, market knowledge and operationally-proven systems to each customer’s individual requirements in both existing and new platforms. By upgrading existing platforms with advanced technologies, TSG provides customers with cost-effective solutions, and its customers are able to improve their technological and operational capabilities within limited budgets.

TSG markets its systems and products either as a prime contractor or as a subcontractor to various governments and defense and homeland security contractors worldwide. In Israel, TSG sells its defense, intelligence and homeland security systems and products mainly to the IMOD, which procures all equipment for the Israeli Defense Force (IDF).

TSG’s offerings include:

Command& Control Solutions

TSG offers sophisticated and innovative command and control solutions that support military and civilian sectors on land, air and sea. TSG provides a variety of Command & Control solutions ranging from strategic battlefield management to tactical and special operations forces. TSG systems cover all echelons of management, from national and regional levels down to the operational and tactical levels. Its systems are field proven and used by military forces, security services and public safety organizations worldwide.

Intelligence, Surveillance and Knowledge Management Solutions

TSG Intelligence solutions for security agencies and defense forces meet the demand for accurate and timely intelligence, based on multiple sources and sensors. TSG unique technologies cover the entire life-cycle of intelligence from acquisition to fusion, analysis, distribution, target management and more. TSG's Knowledge Management solutions provide public sector bodies with the capacity to effectively manage their organizational data, support decision making and follow-up.

Telecommunication & IT Management Solutions

TSG has extensive experience in developing and integrating telecommunications and IT solutions and tools such as Operations Support Systems (OSS), Contact Centers, Back Office Optimization and Value-Added Services (VAS) that are tailored to meet the requirements of multiple applications. Leveraging deep know-how in telecommunications, TSG provides wide-ranging offering suitable for public and private sector organizations.

Cyber Security Solutions & Services:

TSG provides cutting-edge security services and solutions to government and private sectors including secure critical infrastructure and financial institutions in cyber space. TSG cyber solutions, Cyber Security Center (CSC), Security Training, Security Investigations and Security Engineering support the establishment of a safe, secure and reliable work environment and cover, among other things, Security Engineering, Digital Forensics, Computer emergency response teams (CERT), Mobile Security, and Training.

Homeland Security Solutions (HLS)

TSG's field proven homeland security solutions maximize safety and security while minimizing threats. TSG provide its clients with paramount technologies ranging from emergency management and Chemical, biological, radiological and nuclear defense (CBRN) systems, to rescue & special operations and smart and safe city solutions.

Supporting Tools:

TSG offers a variety of supporting system and solutions, providing dynamic and customizable field proven applications for in the following verticals:

- Facility Management
- Recording and Debriefing systems
- Trainers and Simulators
- Mapping Engines

Geographical Distribution of Revenues

The following table summarizes our consolidated revenues classified by geographic regions of our customers, for the periods indicated:

	Year ended December 31,	
	2017	2018
Israel	\$ 846,298	\$ 893,605
International:		
United States	322,892	418,148
Europe	131,025	141,316
Africa	24,370	13,726
Japan	15,763	11,053
Other (mainly Asia pacific)	14,791	15,140
Total	\$ 1,355,139	\$ 1,492,988

Competition

The markets for the IT products and services we offer are rapidly evolving, highly competitive and fragmented, and, in some cases, present only low barriers to entry, with frequent new product introductions, and mergers and acquisitions. Our ability to compete successfully in IT services markets depends on a number of factors, like breadth of service offerings, sales and marketing efforts, service, pricing, and quality and reliability of services. The principal competitive factors affecting the market for the proprietary software solutions include product performance and reliability, product functionality, availability of experienced personnel, price, ability to respond in a timely manner to changing customer needs, ease of use, training and quality of support.

We face competition, both in Israel and internationally, from a variety of companies, including companies with significantly greater resources than us who are likely to enjoy substantial competitive advantages, including:

- longer operating histories;
- greater financial, technical, marketing and other resources;
- greater name recognition;
- well-established relationships with our current and potential clients; and
- a broader range of products and services.

As a result, our competitors may be able to respond more quickly to new or emerging technologies or changes in customer requirements. They may also benefit from greater purchasing economies, offer more aggressive product and service pricing or devote greater resources to the promotion of their products and services. In addition, in the future, we may face further competition from new market entrants and possible alliances between existing competitors. We also face additional competition as we continue to penetrate international markets. As a result, we cannot assure you that the products and solutions we offer will compete successfully with those of our competitors. Furthermore, several software development centers worldwide offer software development services at much lower prices than we do. Due to the intense competition in the markets in which we operate, software products prices may fluctuate significantly. As a result, we may have to reduce the prices of our products.

Matrix's Competitive Landscape

Matrix's principal competitors in the domestic Israeli market are Israeli IT services companies and systems integrators, the largest of which are Hilan Ltd., Malam-Team, One-1, Taldor Computer Systems, Aman, the Elad Group, Yael, SQLink, Emet, LogOn, and HMS. In addition, in recent years, large accounting and advisory firms such as Deloitte and E&Y have expanded their service portfolio to include managed services and consulting in the fields of BI, Cybersecurity, ERP and CRM. We view these firms as direct competition, given that they already have a deep understanding of a particular client's business because of the accounting and auditing services they provide, and given the trust that they have developed with the client, which is an essential part of providing any services to a client. This international trend is as evident in Israel as it is in all major markets around the world. Matrix's competitors in the United States market include many companies that provide similar services to those of Matrix, as well as providers of offshore services which utilize low rates. In some cases, Matrix competes with IBM, Accenture and the large accounting and advisory accounting firms. Matrix's international competitors in the Israeli marketplace include Microsoft, IBM, HP, Oracle and CA. These international competitors often use local subcontractors to provide personnel for contracts performed in Israel. Most of these international entities are also business partners of Matrix. Competitors with respect to infrastructure solutions include HP, Lenovo and Dell. With respect to cloud services, competitors include All Cloud, DoIT, Google, Microsoft and Amazon Web Services. Matrix competitors with respect to training are the training centers of the Technion, IITC, HackerU, Ness Technologies, SQLink and Sela.

Sapiens' Competitive Landscape

Sapiens' competitors in the insurance software solutions market differ based on the size, geography and line of business in which it operates. Some of its competitors offer a full suite of services, while others only offer one module; some operate in specific (domestic) geographies, while others operate on a global basis. In addition, delivery models vary, with some competitors keeping delivery in-house, or using IT outsourcing (ITO) or business process outsourcing (BPO).

The complex requirements of this market create a high barrier to entry for new players. As for existing players, these requirements have led to a marked increase in M&A transactions in the insurance software solutions sector, since small, local vendors have not been able to sustain growth without continuing to fund their R&D departments and follow the globalization trend of their customers.

Examples of Sapiens' primary competitors in the insurance software solutions market are:

- Global software providers with their own IP;

- Local/domestic software vendors with their own IP, operating in a designated geographic market and/or within a designated segment of the insurance industry;
- BPO providers who offer end-to-end outsourcing of insurance carriers business, including core software administration (although BPO providers want to buy comprehensive software platforms to serve as part of the BPO proposition from vendors and may seek to purchase Sapiens' solutions for this purpose);
- Internal IT departments, who often prefer to develop solutions in-house; and
- New insurtech companies with niche solutions.

We differentiate Sapiens from its potential competitors in respect of the competitive landscape for insurance software solutions through the following key factors:

- Sapiens offers innovative and modern software solutions, with rich functionality and advanced, intuitive user interfaces.
- Sapiens uses model-driven architecture that allows rapid deployment of the system, while reducing total cost of ownership.
- Our solutions are built using an architecture that allows customers to implement the full solution or components, and readily integrate the solution or individual components into their existing IT landscape.
- Strong and global partnership program, with established IT players and new insurtech companies, ensures linkage to innovative technologies and new business models, as well as ongoing work to embed innovation into Sapiens platforms.
- We recognize technology trends and invest in adjusting our solutions to keep pace with today's frenetic evolutions.
- We are able to fund R&D investment and maintain the competitive advantage of our products, due to our large and growing customer base and financial stability.
- Our delivery methodology is based on extensive insurance industry experience and cooperation with large insurance companies globally. Our track record over the past few years in developing a strong off-shore development center is also a significant parameter in differentiating our abilities in the services space.
- We leverage our proven track record of successful delivery to help our customers deploy our modern solutions, while integrating with their legacy environment (when that legacy environment must remain supported).

With respect to Sapiens DECISION, we believe that Sapiens is considered a pioneer in its disruptive market landscape. Since the introduction of Sapiens' innovative approach to enterprise architecture to the market, Sapiens has identified only a small number of potential competitors.

We differentiate Sapiens from its potential competitors in respect of the competitive landscape for Business Decision Management Solutions through the following key factors:

- We believe that Sapiens Decision is the only solution (that is currently generally available and already in production) that offers a true separation of the business logic in a decision management system for large enterprises.
- Sapiens Decision is unique in its proven ability to support complex environments, with a full audit trail and governance that is crucial for large financial services organizations.
- We understand complex environments where Decision is deployed, due to our experience delivering complex, mission-critical solutions.

Magic Software's Competitive Landscape

With respect to Magic xpa, Magic Software competes in the application platform, SOA architecture and enterprise mobility markets. Among its current competitors are Kony, IBM, Microsoft, Adobe, Oracle, SAP Sybase, OutSystems, Uniface, Progress Software, Mendix, and Pegasystems. With respect to Magic xpi, Magic Software competes in the integration platform market. Among its current competitors are IBM, Informatica, TIBCO, Scribe, MuleSoft, Jitterbit, Talend and Software AG.

More and more enterprises prefer to integrate their applications using integration platform as a service (iPaaS) technology and for this purpose Magic Software launched its new Magic xpc, a hybrid iPaaS solution.

There are several similar products in the market utilizing the model driven architecture, or MDA, approach utilized by Magic Software's AppBuilder. The market for this type of platform is highly competitive. Companies such as CA and IBM have tools that compete directly with AppBuilder. Furthermore, new development paradigms have become very popular in IT software development and developers today have many alternatives.

The telecom BSS domain in which Magic Software operates through its wholly owned FTS subsidiary is a highly competitive market in which FTS competes based on product quality, service quality, timeliness in delivery and pricing. Within the global billing, charging and policy control market, FTS principally competes against global IT providers and the in-house IT departments of telecommunications operators. Among the competitors focused on this market are Amdocs, Ericsson, Comverse, NetCracker Technology, CSG Systems, Redknee Solutions and Oracle Communications.

There are also a number of smaller or regional telecom BSS competitors who compete on a regional or domestic market level. These tend to be smaller players, and may include companies such as Comarch, Mind CTI, Tecnotree, Cerillion, Openet and Elitcore, among others.

Michpal's Competitive Landscape

The Israeli market in which Michpal, operates is very fragmented, and Michpal's main current competitors in that market are Hilan, MalamTeam, Tamal, Synel, Oketz systems and others.

Our goal is to maintain our technological advantages, time-to-market, and worldwide sales and distribution network. We believe that the principal competitive factors affecting the market for our products include developer productivity, rapid results, product functionality, performance, reliability, scalability, portability, interoperability, ease-of-use, demonstrable economic benefits for developers and users relative to cost, quality of customer support and documentation, ease of installation, vendor reputation and experience, financial stability as well as intuitive and out-of-the-box solutions to extend the capabilities to effectively manage their operations and reduce their business risks in the face of changing business environments.

Seasonality

Even though not significantly reflected in our financial results, traditionally, the first and third quarters of the fiscal year have tended to be slower quarters for some of our subsidiaries and our affiliated companies and the industries in which they operate. The first quarter usually reflects a decline following a highly active fourth quarter during which companies seek to complete transactions and projects and utilize budgets before the end of the fiscal year. The relatively slower third quarter reflects reduced activities during the summer months in many of the regions where our customers are located and also reflects the Jewish national holidays in Israel.

In addition, our quarterly results are also influenced by the number of working days in each period. In Israel. For example, during the Jewish holidays period (typically at the end of the third quarter and beginning of the fourth quarter or at the end of the first quarter and beginning of the second quarter), when the number of working days is lower, we tend to see a decrease in our revenues which may impact our quarterly results. Following are the number of standard working hours in each quarter of 2018 and 2019 in the Israeli market, which accounts for approximately 60% of our annual revenues:

	<u>1st quarter</u>	<u>2nd quarter</u>	<u>3rd quarter</u>	<u>4th quarter</u>
2018	576	559.5	539.5	585
2019	578.5	545	574	537.5
2018	25%	25%	24%	26%
2019	26%	24%	26%	24%

In 2018, for example, the Jewish holidays all took place during the third quarter which negatively impacted our results by reduced billable hours while in 2017 the Jewish holidays took place during both the third and fourth quarter. In 2019, we expect seasonality due to the Jewish holiday periods to adversely impact the second and fourth quarters.

The following table presents our revenues allocation per quarter in 2017 and 2018 (in percentage):

	<u>1st quarter</u>	<u>2nd quarter</u>	<u>3rd quarter</u>	<u>4th quarter</u>
2017	23.0%	24.3%	25.7%	27.0%
2018	25.0%	24.3%	24.3%	26.4%

Raw Materials

Generally, we are not dependent on raw materials or on a single source of supply. We manage our inventory according to project requirements. In some projects, specific major subcontractors are designated by the customer. Raw materials used by us are generally available from a range of suppliers internationally, and the prices of such materials are generally not subject to significant volatility.

Further, although we believe that there are currently adequate replacements for the third-party technology that we presently use and distribute, the loss of our right to use any of this technology could result in delays in producing or delivering affected products until equivalent technology is identified, licensed or otherwise procured, and integrated. Our business would be disrupted if any third party technology we license from others or functional equivalents of that technology were either no longer available to us or no longer offered to us on commercially reasonable terms. In either case, we would be required either to attempt to redesign our products to function with technology available from other parties or to develop these components ourselves, which would result in increased costs and could result in delays in product sales and the release of new product offerings. Alternatively, we might be forced to limit the features available in affected products. Any of these results could harm our business and impact our results of operations.

Software Development

The software industry is generally characterized by rapid technological developments, evolving industry standards and customer requirements, and frequent innovations. In order to maintain technological leadership, we engage in ongoing software development activity through our investees, aimed both at introducing new commercially viable products addressing the needs of our customers on a timely basis, as well as enhancing and customizing existing products and services. This effort includes introducing new supported programming languages and database management systems; improving functionality and flexibility; and enhancing ease of use. We work closely with current and potential end-users, our strategic partners and leaders in certain industry segments to identify market needs and define appropriate product enhancements and specifications.

Intellectual Property Rights

Sapiens holds one patent and one patent application relating to decision management technology used in the Sapiens Decision solution. In the first quarter of 2017, Sapiens acquired StoneRiver. The acquisition of StoneRiver included the acquisition of 25 registered trademarks, one issued patent and one patent application. In the first quarter of 2018 Sapiens acquired Adaptik. Adaptik owns two registered patents. In accordance with industry practice, we do not otherwise hold any patents and rely upon a combination of trade secret, copyright and trademark laws and non-disclosure agreements, to protect our proprietary know-how. Our proprietary technology incorporates processes, methods, algorithms and software that we believe are not easily copied. Despite these precautions, it may be possible for unauthorized third parties to copy aspects of our products or to obtain and use information that we regard as proprietary. We believe that because of the rapid pace of technological change in the industry generally, patent and copyright protection are less significant to our competitive position than factors such as the knowledge, ability and experience of our personnel, new product development and ongoing product maintenance and support.

With respect to our defense sector activities, the IMOD usually retains specific rights to technologies and inventions resulting from our performance under Israeli government contracts. This generally includes the right to disclose the information to third parties, including other defense contractors that may be our competitors. Consistent with common practice in the defense industry, a majority of TSG's revenues in 2018 was dependent on products incorporating technology that a government customer may disclose to third parties. When the Israeli government funds research and development, it usually acquires rights to data and inventions. We often may retain a non-exclusive license for such inventions. The Israeli government usually is entitled to receive royalties on export sales in relation to sales resulting from government financed development. However, if only the product is purchased without development effort, we normally retain the principal rights to the technology. Subject to applicable law, regulations and contract requirements, TSG attempts to maintain its intellectual property rights and provide customers with the right to use the technology only for the specific project under contract.

Regulatory Impact

The global financial services industry served in particular by Sapiens, Matrix and Michpal is heavily subject to government and market regulation, which is constantly changing. Financial services companies must comply with regulations such as the Sarbanes-Oxley Act, Solvency II, Retail Distribution Review (known as RDR) in the United Kingdom, the European Union General Data Protection Regulation, or GDPR (enforceable as of May 25, 2018), in the EU, the Dodd-Frank Act and other directives regarding transparency. In addition, many individual countries have increased supervision over local financial services companies. For example, in Europe, regulators have been very active, motivated by past financial crises and the need for pension restructuring. Distribution of insurance policies is being optimized with the increasing use of Bank Assurance (selling of insurance through a bank's established distribution channels), supermarkets and kiosks (insurance stands). Increased activity such as that in Europe would generally tend to have a positive impact on the demand for our software solutions and services; nevertheless, insurers are cautiously approaching spending increases, and while many companies have not taken proactive steps to replace their software solutions in recent years, many of them are now looking for innovative, modern replacements to meet the regulatory changes.

Matrix's IT business is generally positively affected by regulatory reform and other regulatory changes with respect to banking, insurance and telecommunications in Israel, as such reforms and changes create demand for specific IT solutions, often in a set, short time frame. In particular, regulation on large financial institutions operating in the Israeli financial market is continuously increasing, as a means of reducing the risk associated with the activities of such financial institutions and increasing transparency and increases the demand for Matrix's solutions for entities that become subject to such supervision. Banks' entry into the sphere of offering advice with respect to pension, insurance and other financial products has also generated demand for Matrix's IT solutions, given the increased supervision of the Israeli Securities Authority that is triggered by such activities, although the pace at which such demand has grown has been relatively slower. Enhanced disclosure requirements for banks and financial institutions in the Israeli market, such as those published with respect to the required capital liquidity of banks in Israel, have also been generating demand for new IT solutions that Matrix offers. Matrix's business is also affected by changes in regulations of the U.S. Securities and Exchange Commission, the Financial Industry Regulatory Authority, the Commodity Futures Trading Commission, the National Futures Association, the Federal Energy Regulatory Commission, with respect to requirements relating to Know Your Customer, Customer Identification Programs, Anti-Money Laundering and Fraud Prevention.

In recent years, there has been greater focus on core banking issues, and today a number of banks are in the process of undergoing a gradual examination / replacement of the traditional core systems. The financial market is also facing significant changes and opportunities for the IT market in light of the Strum Reform and its implications for the banking market, credit card companies and other relevant players in the financial market. In the insurance industry, there is a delay in decision making based on the prolonged selling process of some of the companies, and in light of the worsening of the capital adequacy ratios and actuarial reserves that are required by regulators and which affect the profitability of the companies, their ability to distribute a dividend or allocate budgets for IT investments as in the past.

With respect to our defense sector activities, we operate under laws, regulations and administrative rules governing defense and other government contracts, mainly in Israel. Some of these carry major penalty provisions for non-compliance, including disqualification from participating in future contracts. In addition, our participation in governmental procurement processes in Israel, the United States and other countries is subject to specific regulations governing the conduct of the process of procuring defense and homeland security contracts.

Israeli Export Regulations. Israel's defense export policy regulates the sale of a number of our systems and products, which are developed and marketed by our affiliated company TSG. Current Israeli policy encourages exports to approved customers of defense systems and products such as ours, as long as the export is consistent with Israeli government policy. Subject to certain exemptions, a license is required to initiate marketing activities. We also must receive a specific export license for defense related hardware, software and technology exported from Israel. Israeli law also regulates export of "dual use" items (items that are typically sold in the commercial market but that also may be used in the defense market).

Procurement Regulations. Solicitations for procurements by governmental purchasing agencies in Israel, the United States and other countries are governed by laws, regulations and procedures relating to procurement integrity, including avoiding conflicts of interest, corruption, human trafficking and conflict minerals in the procurement process. Such regulations also include provisions relating to information assurance and for the avoidance of counterfeit parts in the supply chain.

Civil Aviation Regulations. Several of the products sold by TSG for commercial aviation applications are subject to flight safety and airworthiness standards of the U.S. Federal Aviation Administration (FAA) and similar civil aviation authorities in Israel, Europe and other countries.

Buy-Back. As part of their standard contractual requirements for defense programs, several of our customers may include "buy-back" or "offset" provisions. These provisions are typically obligations to make, or to facilitate third parties to make, various specified transactions in the customer's country, such as procurement of defense and commercial related products, investment in the local economy and transfer of know-how.

Magic Software's business has not been impacted to a material extent by government regulations.

C. Organizational Structure

Formula is the parent company of the Formula Group.

The following table presents certain information regarding the control and ownership of our directly held investments in subsidiaries and affiliates, as of March 31, 2019.

Subsidiaries and affiliate	Country of Incorporation	Percentage of Ownership
Matrix IT Ltd.	Israel	48.9%
Sapiens International Corporation N.V.	Cayman Islands	48.1%
Magic Software Enterprises Ltd.	Israel	45.2%
Michpal Micro Computers (1983) Ltd.	Israel	100.0%
TSG IT Advanced Systems Ltd.	Israel	50.0%
InSync Staffing Solutions, Inc.	Delaware	90.1%

The common shares of Sapiens and the ordinary shares of Magic Software are traded on the NASDAQ Capital Market and the NASDAQ Global Select Market, respectively, and on the TASE, and the ordinary shares of Matrix are traded on the TASE.

D. Property, Plants and Equipment

Formula's headquarters, as well as the headquarters and principal administrative, finance, sales, marketing and research and development office of Magic Software, are located in Or-Yehuda, Israel, a suburb of Tel Aviv. Magic Software leases its and our office space, constituting approximately 23,841 square feet, under a lease which expires in June 2019. Magic Software has an option to terminate the lease agreement upon six months prior written notice. In addition, Magic Software leases office space in the United States, Europe, Asia and South Africa. In 2018, Magic Software's rent costs totaled \$2.4 million, in the aggregate, for all of its leased offices.

Matrix leases approximately 600,000 square feet of office space in Israel pursuant to leases which expire primarily in three to four years. This includes Matrix's facility in Herzliya, which serves as Matrix's corporate headquarters. In addition, Matrix leases an aggregate of approximately 90,000 square feet of office space in locations outside of Israel, in the United States, Bulgaria, Macedonia, Hungary and India. The lease terms for the spaces that Matrix currently occupies are generally three to four years. In the year ended December 31, 2018, Matrix's rent costs totaled \$19.7 million, in the aggregate, for all of its leased offices.

Sapiens leases office space in Israel, the United States, India, Poland, South Africa, the United Kingdom, Latvia, China, Canada and Denmark. The lease terms for the spaces that Sapiens currently occupies are generally five to eleven years. Based on Sapiens' current occupancy, it leases the following amount of space in the following locations: in Israel, approximately 128,000 square feet of office space; in the United States, approximately 77,000 square feet; in India, approximately 82,000 square feet; in Poland, approximately 34,600 square feet; in South Africa, approximately 42,300 square feet; in the United Kingdom, approximately 21,300 square feet; in Latvia, approximately 8,500 square feet; in China, approximately 2,900 square feet; in Canada, approximately 1,400 square feet; and, in Denmark, approximately 200 feet. Sapiens also occupies 10,243 square feet of office space in the United States that constitutes owned real property. In 2018, Sapiens rent costs totaled \$7.2 million, in the aggregate, for all of its leased offices. Sapiens' corporate headquarters are located in Israel and its core research and development activities are performed at its offices across Israel. The lease at Sapiens headquarters in Holon, Israel is for a term in excess of four remaining years and Sapiens holds an option to extend the term for additional five years.

Michpal leases approximately 7,500 square feet of office space in Israel pursuant to a lease agreement that expires primarily in three years. The properties covered by this lease agreement include Michpal's facility in Tel-Aviv, which serves as Michpal's corporate headquarters. As of December 31, 2018, Michpal's lease is for a term of in excess of one remaining year, and Michpal has an option to extend the term for an additional three-year term. During the year ended December 31, 2018, Michpal's rent costs totaled \$0.2 million, in the aggregate, for its leased office space.

We believe that our properties are adequate for our present use of them. If in the future we require additional space to accommodate our growth, we believe that we will be able to obtain such additional space without difficulty and at commercially reasonable prices.

As described in "Subsidiary Commitments" in Item 5.B below, while our subsidiaries and our affiliated companies have incurred liens on leased vehicles, leased equipment and other assets in favor of leasing companies, neither Formula nor any subsidiary has encumbered the real property that it uses in its operations.

We furthermore believe that there are no environmental issues that encumber our use of our facilities.

ITEM 4A. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 5. OPERATING AND FINANCIAL REVIEW AND PROSPECTS

Overview

We are a global software solutions and IT professional services holdings company that is principally engaged through our directly held investees in providing proprietary and non-proprietary software solutions and IT professional services, software product marketing and support, computer infrastructure and integration solutions and learning and integration. We deliver our solutions in over 50 countries worldwide to customers with complex IT services needs, including a number of “Fortune 1000” companies.

Since our inception, we have acquired effective controlling interests, and have invested, in companies which are engaged in the IT solutions and services business. We, together with our investees, are known as the Formula Group.

Other than in our joint control in TSG in which each of we and Israeli Aerospace Industries Ltd. holds 50% of its voting power, we currently have effective control under IFRS 10 in each of our other investees, Matrix, Sapiens, Magic Software, Michpal and InSync despite the lack of absolute majority of voting power in Matrix, Magic Software and Sapiens. As a result of our effective control in these investees as of December 31, 2018 and in accordance with IFRS, we consolidated their financial results with ours throughout the period covered by the financial statements included in Item 18 of this annual report. Prior to our transition to reporting under IFRS, we consolidated investees in which we held an equity interest only if we held a controlling interest in those companies. Under IFRS 10, we may consolidate entities in which we have effective control. For further information, please see Note 2(3) to our consolidated financial statements included in Item 18 of this annual report.

Except for providing our investees with our management, technical expertise and marketing experience to help them create a consecutive positive economic impact and long-term value and direct their overall strategy through our active involvement, we do not conduct independent operations at our parent company level. Our operating results are, and have been, directly influenced by the business operations of our subsidiaries and affiliated company.

Our consolidated financial statements for the years ended December 31, 2017 and 2018 are prepared in accordance with IFRS. For all periods up to and including the year ended December 31, 2015, we had historically prepared our financial statements in accordance with U.S. GAAP. In order to comply with requirements of the SEC related to our transition to IFRS, we set the date of transition as January 1, 2015 and retrospectively applied IFRS as of that date and for the year ended December 31, 2015. We have presented herein consolidated statements of financial position that comply with IFRS as of December 31, 2017 and 2018. Our consolidated statements of profit or loss presented herein in accordance with IFRS cover the years ended December 31, 2016, 2017 and 2018.

We recognize revenues in two categories: the delivery of software services and the delivery of proprietary software solutions and related services. All of our investees, recognize revenues from the delivery of software services, and most of them recognize revenues in both revenue categories. For ease of reference, we have separated our subsidiaries into these categories in accordance with the category in which each subsidiary has earned most of its revenues (although each type of revenue is nevertheless recorded according to actual revenue type, rather than based on strict, subsidiary-delineated categories).

Our functional and reporting currency

The currency of the primary economic environment in which our operations and certain of our subsidiaries are conducted is the dollar. Thus, our functional currency and that of certain of our subsidiaries is the dollar. Formula has elected to use the dollar as its reporting currency for all years presented.

Assets, including fair value adjustments upon acquisition, and liabilities of an investee which is a foreign operation, are translated at the closing rate at each reporting date. Profit or loss items are translated at average exchange rates for all periods presented. The resulting translation differences are recognized in other comprehensive income (loss).

Intragroup loans for which settlement is neither planned nor likely to occur in the foreseeable future are, in substance, a part of the investment in the foreign operation and, accordingly, the exchange rate differences from these loans (net of the tax effect) are recorded in other comprehensive income (loss).

Upon the full or partial disposal of a foreign operation resulting in loss of control in the foreign operation, the cumulative gain (loss) from the foreign operation which had been recognized in other comprehensive income is transferred to profit or loss. Upon the partial disposal of a foreign operation which results in the retention of control in the subsidiary, the relative portion of the amount recognized in other comprehensive income is reattributed to non-controlling interests.

Transactions denominated in foreign currency are recorded upon initial recognition at the exchange rate at the date of the transaction. After initial recognition, monetary assets and liabilities denominated in foreign currency are translated at each reporting date into the functional currency at the exchange rate at that date. Exchange rate differences, other than those capitalized to qualifying assets or accounted for as hedging transactions in equity, are recognized in profit or loss. Non-monetary assets and liabilities denominated in foreign currency and measured at cost are translated at the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currency and measured at fair value are translated into the functional currency using the exchange rate prevailing at the date when the fair value was determined.

For those subsidiaries whose functional currency has been determined to be their local currency, assets and liabilities are translated at year-end exchange rates and statement of income items are translated at average exchange rates prevailing during the year. Such translation adjustments are recorded as a separate component of accumulated other comprehensive income (loss) in equity.

Critical Accounting Policies

Our discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with IFRS. The preparation of our financial statements required us, in certain circumstances, to make estimations, assumptions and judgments that affect the reporting amounts of assets, liabilities, revenues and expenses and related disclosure of contingent assets and liabilities within the reporting period. We have based our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis of making judgments about the values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions. More detailed descriptions of these policies are provided in Note 2 to our consolidated financial statements contained elsewhere in this annual report.

The significant accounting policies which we believe are the most critical to aid in fully understanding and evaluating our reported financial results include the following:

Consolidated financial statements:

The consolidated financial statements comprise the financial statements of companies that we controlled (subsidiaries). Control is achieved when we are exposed, or have rights, to variable returns from our involvement with the investee and have the ability to affect those returns through our power over the investee. Potential voting rights are considered when assessing whether an entity has control. The consolidation of the financial statements commences on the date on which control is obtained and ends when such control ceases. In a situation when we hold less than a majority of voting rights in a given entity, but it is sufficient to unilaterally direct the relevant activities of such entity, then the control is exercised. When assessing whether our voting rights are sufficient to give us power, we consider all facts and circumstances, including: the size of our holding of voting rights relative to the size and dispersion of other vote holders; our potential voting rights and other shareholders or parties; rights arising from other contractual arrangements; significant personal ties and any additional facts and circumstances that may indicate that we have, or do not have the ability to direct the relevant activities when decisions need to be made, inclusive of voting patterns observed at previous meetings of shareholders.

Our financial statements and the financial statements of our investees, after being adjusted to comply with IFRS, are prepared for the same reporting period and using consistent accounting treatment of similar transactions and economic activities. Any discrepancies in the applied accounting policies are eliminated by making appropriate adjustments. Significant intragroup balances and transactions and gains or losses resulting from intragroup transactions are eliminated in full in the consolidated financial statements.

Business combinations and goodwill:

Business combinations are accounted for by applying the acquisition method. The cost of the acquisition is measured at the fair value of the consideration transferred on the acquisition date with the addition of non-controlling interests in the acquiree. In each business combination, we consider whether to measure the non-controlling interests in the acquiree based on their fair value on the acquisition date or at their proportionate share in the fair value of the acquiree's net identifiable assets.

Direct acquisition costs are carried to the statement of profit or loss as incurred.

In a business combination achieved in stages, equity interests in the acquiree that had been held by the acquirer prior to obtaining control are measured at the acquisition date fair value while recognizing a gain or loss resulting from the revaluation of the prior investment on the date of achieving control.

Contingent consideration is recognized at fair value on the acquisition date and classified as a financial asset or liability in accordance with IAS 39, "Financial Instruments: Recognition and Measurement". Subsequent changes in the fair value of the contingent consideration are recognized in profit or loss. If the contingent consideration is classified as an equity instrument, it is measured at fair value on the acquisition date without subsequent remeasurement.

Goodwill is initially measured at cost which represents the excess of the acquisition consideration and the amount of non-controlling interests over the net identifiable assets acquired and liabilities assumed. If the resulting amount is negative, the acquirer recognizes the resulting gain on the acquisition date without subsequent measurement.

Investment in joint arrangements:

Joint arrangements are arrangements in which we have joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

i. Joint ventures:

In joint ventures the parties that have joint control of the arrangement have rights to the net assets of the arrangement. A joint venture is accounted for by using the equity method at equity

ii. Joint operations:

In joint operations the parties that have joint control of the arrangement have rights to the assets and obligations for the liabilities relating to the arrangement. We recognize in relation to our interest our share of the assets, liabilities, revenues and expenses of the joint operation.

Investments accounted for using the equity method:

Our investments in associates and joint ventures are accounted for using the equity method. Associates are companies in which we have significant influence over the financial and operating policies without having control. An investment in an associate is accounted for using the equity method.

Under the equity method, the investment in the associate or in the joint venture is presented at cost with the addition of post-acquisition changes in our share of net assets, including other comprehensive income of the associate or the joint venture. Gains and losses resulting from transactions between us and the associate or the joint venture are eliminated to the extent of the interest in the associate or in the joint venture.

Goodwill relating to the acquisition of an associate or a joint venture is presented as part of the investment in the associate or the joint venture, measured at cost and not systematically amortized. Goodwill is evaluated for impairment as part of the investment in the associate or in the joint venture as a whole.

Our financial statements and of the associate or joint venture are prepared as of the same dates and periods. The accounting policies applied in the financial statements of the associate or the joint venture are uniform and consistent with the policies applied in our financial statements.

Upon the acquisition of an associate or a joint venture achieved in stages when the former investment in the acquiree was accounted for pursuant to the provisions of IAS 9, we adopt the principles of IFRS 3 regarding business combinations achieved in stages. Consequently, equity interests in the acquiree that had been held by us prior to achieving significant influence or joint control are measured at fair value on the acquisition date and are included in the acquisition consideration while recognizing a gain or loss resulting from the fair value measurement.

The equity method is applied until the loss of significant influence in the associate or loss of joint control in the joint venture or classification as investment held for sale. On the date of loss of significant influence or joint control, we measure any remaining investment in the associate or the joint venture at fair value and recognize in profit or loss the difference between the fair value of any remaining investment plus any proceeds from the sale of the investment in the associate or the joint venture and the carrying amount of the investment on that date.

We recognize losses of an associate in amounts which exceed its equity to the extent of our investment in the associate plus any losses that we may incur as a result of a guarantee or other financial support provided in respect of the associate. For this purpose, the investment includes long-term receivables (such as loans granted) for which settlement is neither planned nor likely to occur in the foreseeable future.

The equity method is applied until the loss of significant influence in the associate or loss of joint control in the joint venture or classification as investment held for sale. We continue to apply the equity method even in cases where the investment in the associate becomes an investment in a joint venture and vice versa. We apply the provisions of IFRS 5 to the investment or a portion of the investment in the associate or the joint venture that is classified as held-for-sale. Any retained interest in this investment which is not classified as held-for-sale continues to be accounted for using the equity method.

On the date of loss of significant influence or joint control, we measure any remaining investment in the associate or the joint venture at fair value and recognizes in profit or loss the difference between the fair value of any remaining investment plus any proceeds from the sale of the investment in the associate or the joint venture and the carrying amount of the investment on that date.

Revenue Recognition

We derive our revenues primarily from the sale of information technology services which also include sale of: non-proprietary software products, including maintenance, integration and infrastructure, outsourcing, training and deployment. In addition, we generate revenues from licensing the rights to use our proprietary software, provision of related IT professional services (which may or may not be considered essential to the functionality of the software license), related maintenance and technical support, as well as implementation and post-implementation consulting services.

IFRS 15, "Revenue from Contracts with Customers", or the Standard, issued by the IASB in May 2014, supersedes IAS 11 'Construction Contracts', IAS 18 'Revenue from contracts with customers' and related interpretations and applies to all revenue arising from contracts with customers, unless those contracts are in the scope of other standards.

The accounting policy for revenue recognition that applied until December 31, 2017 is as follows:

Revenues are recognized in profit or loss when the revenues can be measured reliably, it is probable that the economic benefits associated with the transaction will flow to us, and the costs incurred or to be incurred in respect of the transaction can be measured reliably. Revenues are measured at the fair value of the consideration less any trade discounts, volume rebates and returns.

The following are the specific revenue recognition criteria which must be met before we recognize revenue:

- i. Revenues from software solutions and services:
 - a) Revenues from contracts based on actual inputs. Revenues from master agreements based on actual inputs are recognized based on actual labor hours.
 - b) Outsourcing. These agreements are similar in nature to agreements that are based on actual labor hours. We allocate employees to projects that are generally managed by the customers at their charge based on the pricing of labor hours. Revenues are recognized based on actual labor hours.

Certain of our software license sales, mainly those consummated as part of an overall solution offered to a customer, may also include significant implementation and customization services, with respect to such sales, which are deemed essential to the functionality of the license. In addition, we also provide consulting services that are not deemed essential to the functionality of the license, as well as outsourcing IT services.

With respect to revenues that involve significant implementation and customization services to customer specific requirements and which are considered essential to the functionality of the product offered (for example, when we sell software licenses as part of an overall solution offered to a customer that combines the sale of software licenses, which includes significant implementation that is considered essential to the functionality of the license), whether generated by fixed-price or time-and-materials contracts, we account for revenues for the services together with the software under contract, using the percentage-of-completion method. The percentage-of-completion method is used when the required services are quantifiable, based on the estimated number of labor hours necessary to complete the project, and under that method revenues are recognized using labor hours incurred as the measure of progress towards completion. These types of revenues are mainly included in our proprietary software products and related services, and software services, revenue streams.

The use of the percentage-of-completion method for revenue recognition requires the use of various estimates, including, among others, the extent of progress towards completion, contract completion costs and contract revenue. Profit to be recognized is dependent upon the accuracy of estimated progress, achievement of milestones and other incentives and other cost estimates. Such estimates are dependent upon various judgments we make with respect to those factors, and some are difficult to accurately determine until the project is significantly underway. Progress is evaluated each reporting period. We recognize adjustments to profitability on contracts utilizing the percentage-of-completion method on a cumulative basis, when such adjustments are identified. We have a history of making reasonably dependable estimates of the extent of progress towards completion, contract revenue and contract completion costs on our long-term contracts. However, due to uncertainties inherent in the estimation process, it is possible that actual completion costs may vary from estimates.

If our actual results turn out to be materially different than our estimates, or we do not manage the project properly within the projected periods of time or satisfy our obligations under the contract, project margins may be significantly and negatively affected, which may result in losses on existing contracts. Any such reductions in margins or contract losses in a large, fixed-price contract may have a material adverse impact on our results of operations

Estimates of total project requirements are based on prior experience of customization, delivery and acceptance of the same or similar technology, and are reviewed and updated regularly by management. After delivery, if uncertainty exists about customer acceptance of the software, license revenue is not recognized until acceptance. Provisions for estimated losses on uncompleted contracts are made in the period in which such losses are first determined, in the amount of the estimated loss on the entire contract.

ii. Revenues from sales, distribution and support of software products:

We recognize revenues from the sale of software (i) only after the significant risks and rewards of ownership of the software have been transferred to the buyer for which a necessary condition is delivery of the software, either physically or electronically, or providing the right to use or permission to make copies of the software, (ii) the amount of revenues can be measured reliably, (iii) it is probable that the economic benefits associated with the transaction will flow to us and the costs incurred or to be incurred in respect of the transaction can be measured reliably, (iv) we do not retain any continuing management involvement that is associated with ownership and (v) we do not retain the effective control of the sold software. We report income on a gross basis since we act as a principal and bear the risks and rewards derived from the transaction. In addition, we recognize revenues from providing software related services. When the stage of completion cannot be determined reliably, revenues are recognized on a straight-line basis over the agreement period.

Revenue from third-party sales is recorded at a gross or net amount according to certain indicators. The application of these indicators for gross and net reporting of revenue depends on the relative facts and circumstances of each sale and requires significant judgment.

Revenues from sale agreements that do not provide a general right of return and consist of multiple elements such as hardware, service and support agreements are split into different accounting units which are separately recognized. An element only represents a separate accounting unit if and only if it has stand-alone value for the customer. Moreover, there should be reliable and objective evidence of the fair value of all the elements in the agreement or of the fair value of undelivered elements. Revenues from the various accounting units are recognized when the revenue recognition criteria are met with respect to all the elements of the accounting unit based on their specific type and only up to the amount of the consideration that is not contingent on completion or performance of the other elements in the contract.

Maintenance and support includes annual maintenance contracts providing for unspecified upgrades for new versions and enhancements on a when-and-if-available basis for an annual fee. The right for unspecified upgrades for new versions and enhancements on a when-and-if-available basis does not specify the features, functionality and release date of future product enhancements for the customer to know what will be made available and the general timeframe in which it will be delivered. Revenues from maintenance services are recognized on a straight-line basis at the relative portion of the maintenance contract that is determined for each reporting year. Revenues that have been received before the respective service has been provided are carried to deferred income. Maintenance and support revenue included in multiple element arrangements is deferred and recognized on a straight-line basis over the term of the maintenance and support agreement.

iii. Revenues from training and implementation services:

Revenues from trainings and implementations are recognized when providing the service. Revenues from training services in respect of courses conducted over a period of up to three months will be recognized over the period of the course. Revenues from training services in respect of courses ordered in advance and long-term or short term (for a period of up to a year) retraining courses will be recognized over the period of the course. Revenues from projects which are usually ordered by organizations, will be recognized under the actual inputs by using the basis hours actually invested in the project.

iv. Revenues from hardware products and infrastructure solutions:

Revenues from hardware products and infrastructure solutions are recognized after all the significant risks and rewards of ownership of the products have been transferred to the buyer. We do not retain any continuing management involvement that is associated with ownership and do not retain the effective control of the sold products, the amount of revenues can be measured reliably, it is probable that the economic benefits associated with the transaction will flow to us, and the costs incurred or to be incurred in respect of the transaction can be measured reliably.

The accounting policy for revenue recognition applied commencing from January 1, 2018, is as follows:

We adopted IFRS 15 on January 1, 2018 and elected to apply the modified retrospective approach with the cumulative effect recognized as an adjustment to the opening retained earnings balance of \$1.8 million as of January 1, 2018. We applied a practical expedient allowed under IFRS 15 and exempt from the restatement of comparable data. This means that financial data reported for reporting periods prior to December 31, 2017 has been prepared on the basis of the following standards: IAS 18 'Revenue'; IAS 11 'Construction Contracts'; as well as interpretations related to revenue recognition that were applicable before the effective date of IFRS 15. Results for reporting periods beginning after January 1, 2018 are presented in accordance with IFRS 15.

The new standard establishes a five-step model to account for revenue arising from contracts with customers and requires entities to exercise judgement, taking into consideration all of the relevant facts and circumstances when applying each step of the model to contracts with their customers:

- Step 1: Identify the contract with a customer, including reference to contract combination and accounting for contract modifications.
- Step 2: Identify the separate performance obligations in the contract.
- Step 3: Determine the transaction price, including reference to variable consideration, significant financing components, non-cash consideration and any consideration payable to the customer.
- Step 4: Allocate the transaction price to the distinct performance obligations on a relative stand-alone selling price basis using observable information, if it is available, or using estimates and assessments.
- Step 5: Recognize revenue when a performance obligation is satisfied, either at a point in time or over time.

Under IFRS 15, revenues are recognized when control of the promised goods or services are transferred to the customers in an amount that reflects the consideration that we expect to receive in exchange for those goods or services.

We enter into contracts that can include various combinations of products and software, IT services and hardware, as detailed below, which are generally capable as being distinct from each other and accounted for as separate performance obligations.

For contracts with customers that contain multiple performance obligations, we account for each individual performance obligation separately, if they are distinct from each other. The transaction price is allocated to the separate performance obligations on a relative stand-alone selling price basis.

Stand-alone selling prices of software sales are typically estimated using the residual approach due to the lack of selling software licenses on a stand-alone basis. Stand-alone selling prices of software services are typically determined by considering several external and internal factors including but not limited to, observable transactions when these services are sold on a stand-alone basis.

The following is a description of principal activities from which we generate our revenues:

- i. Sale of proprietary licenses without significant related services

In the event in which the sale of a proprietary license (perpetual or term-based) is distinct from other significant modification or implementation services, and thereby it constitutes a separate performance obligation, we consider whether this performance obligation in granting the license is to provide the customer with either:

- a right to access the entity's intellectual property in the form in which it exists throughout the licensing period; or
- a right to use the entity's intellectual property in the form in which it exists at the time of granting the license

The vast majority of licenses that we sell separately (thus representing a separate performance obligation) are intended to provide the customer with a right to use the intellectual property, which means that revenues from the sale of such licenses are recognized at the point in time at which control of the license is transferred to the customer.

We recognize revenue from software licensing transactions over time when we provide the customer a right to access our intellectual property throughout the license period.

ii. Sale of proprietary licenses with significant related services

We generally account for revenues from contracts that include the sale of proprietary licenses with significant related services (for example, modifications, implementation or customization to customer-specific specifications) as performance obligations satisfied over time. In such contracts we are normally committed to provide the customer with a functional IT system and the customer can only benefit from such functional system, being the final product that would normally be comprised of proprietary licenses and significant related services. We consider that a commitment to sell a license under such performance obligation does not satisfy the criteria of being distinct, because the transfer of the license is only part of a larger performance obligation. We recognize revenue from such contracts using cost based input methods, which recognizes revenue and gross profit as the work is performed based on a ratio between actual costs incurred compared to the total estimated costs for the contract. This is because, in accordance with IFRS 15, revenues may be recognized over the course of transferring control of the supplied goods and services, as long as the entity's performance does not create an asset with an alternative use to the entity, and the entity has an enforceable right to payment for performance completed to date throughout the duration of the contract. Provisions for estimated losses on uncompleted contracts are made during the period in which such losses are first determined, in the amount of the estimated loss for the entire contract.

When appropriate, we also apply a practical expedient permitted under IFRS 15 whereby if we have a right to consideration from a customer in an amount that corresponds directly with the value to the customer of our performance completed to date (for example, a service contract in which an entity bills a fixed amount for each hour of service provided), we may recognize revenue in the amount it is entitled to invoice. Deferred revenues, which represent a contract liability, include unearned amounts received under maintenance and support (mainly) and amounts received from customers for which revenues have not yet been recognized.

iii. Maintenance services and warranties

Post-contract support includes annual maintenance contracts providing for unspecified upgrades for new versions and enhancements on a when-and-if-available basis for an annual fee. The right for an unspecified upgrade for new versions and enhancements on a when-and-if-available basis do not specify the features, functionality and release date of future product enhancements for the customer to know what will be made available and the general timeframe in which it will be delivered.

The accounting policy regarding the recognition of post-contract support remained unchanged after the adoption of IFRS 15, as such services, in principle, constitute a separate performance obligation where the customer consumes the benefits of goods and services as they are delivered by the provider, as a consequence of which revenues are recognized over time during the service performance period.

We consider the post-contract support performance obligation as a distinct performance obligation that is satisfied over time, and as such, it recognizes revenue for post-contract support on a straight-line basis over the period for which technical support is contractually agreed to be provided for the software, typically twelve (12) months.

In certain cases, we also provide a warranty for goods and services sold (i.e. extended warranties that the scope of which is broader than just an assurance to the customer that the product/service complies with agreed-upon specifications). We have ascertained that such warranties which we have granted meet the definition of service. The conclusion regarding the extended nature of a warranty is made whenever we contractually undertake to repair any errors in the delivered software within a strictly specified time limit and/or when such warranty is more extensive than the minimum required by law. Under IFRS 15, the fact of granting an extended warranty indicates that we actually provide an additional service. As such, we recognize an extended warranty as a separate performance obligation and allocates a portion of the transaction price to such service. In all cases where an extended warranty is accompanied by a maintenance service, which is even a broader category than an extended warranty itself, revenues are recognized over time because the customer consumes the benefits of such service as it is performed by the provider. If this is the case, we continue to allocate a portion of the transaction price to such maintenance service. Likewise, in cases where a warranty service is provided after the project completion and is not accompanied by any maintenance service, then a portion of the transaction price and analogically recognition of a portion of contract revenues will have to be deferred until the warranty service is actually fulfilled.

iv. Sale of third-party licenses and services

Third-party licenses and services include revenues from the sale of third-party licenses as well as from the provision of services which, due to technological or legal reasons, must be carried out by subcontractors (this applies to hardware and software maintenance and outsourcing services provided by their manufacturers). Revenues from the sale of third-party licenses are accounted for as sales of goods, which means that such revenues are recognized at the point in time at which control of the license is transferred to the customer. Concurrently, revenues from third-party services, including primarily third-party maintenance services, are recognized over time when such services are provided to the customer.

Whenever we are involved in the sale of third-party licenses or services, we will consider whether we act as a principal or an agent; however, in most cases the conclusion is that we are the main party required to satisfy a performance obligation, and, therefore, the resulting revenues are recognized in the gross amount of consideration.

v. Sale of hardware

Sale of hardware includes revenues from contracts with customers for the supply of infrastructure. In this category, revenues are recognized basically at the point in time at which control of the equipment is transferred. This does not apply to contracts in which the hardware is not delivered separately from services provided alongside, in such case the sale of hardware is part of a performance obligation involving the supply of a comprehensive system. However, such comprehensive projects are a rare practice in our operations, as the sale of hardware is predominantly performed on a distribution basis.

vi. Variable consideration

In accordance with IFRS 15, if a contract consideration encompasses any amount that is variable, we shall estimate the amount of consideration to which it will be entitled in exchange for transferring promised goods or services to the customer, and shall include a portion or the whole amount of variable consideration in the transaction price but only to the extent that it is highly probable a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

vii. Significant financing component

When contracts involve a significant financing component, we adjust the promised amount of consideration for the effects of the time value of money if the timing of payments agreed to by the parties to the contract (either explicitly or implicitly) provide the customer with a significant benefit of financing.

We have elected to apply the practical expedient allowed by IFRS 15 according to which it does not separate the financing component in transactions whose credit terms are less than one year and will recognize revenue in the amount of the consideration stated in the contract even if the customer pays for the goods or services subsequent to their receipt.

viii. Costs of contracts with customers

Costs of obtaining a contract

Costs of obtaining a contract are those incremental costs that we incur in order to obtain a contract with a customer that we would not have incurred if the contract had not been obtained. We recognize such costs as an asset if we expect to recover those costs. Such capitalized costs of obtaining a contract shall be amortized over the period when we satisfy the performance obligations arising from the contract. Amortization expenses related to costs of obtaining or fulfilling a contract are included in sales and marketing expenses in the consolidated statements of profit or loss.

Commissions to sales and marketing and certain management personnel that are paid based on their attainment of certain predetermined sales or profit goals, are considered as incremental costs of obtaining a contract with a customer, and as such they are deferred and amortized on a systematic basis, consistent with the transfer of the related performance obligations to the customer. In accordance, sales commissions paid for initial contracts, which are not commensurate with additional commissions paid for renewal of such contracts, are capitalized and amortized over the expected period of benefit (including expected renewals periods). Sales commissions on initial contracts, which are commensurate with additional commissions paid for the renewal of such contracts, are capitalized and then amortized correspondingly to the recognized revenue of the related initial contracts (not including expected renewals periods). Sales commissions for renewal of such initial contracts are capitalized and then amortized on a straight line basis over the related contractual renewal period. As a practical expedient, if the expected amortization period is one year or less, the commission fee is expensed as incurred.

Costs to fulfill a contract

Costs to fulfill a contract are the costs incurred in fulfilling a contract with a customer. We recognize such costs as an asset if they are not within the scope of another standard (for example, IAS 2 'Inventories', IAS 16 'Property, Plant and Equipment' or IAS 38 'Intangible Assets') and if those costs meet all of the following criteria:

- i) the costs relate directly to a contract or to an anticipated contract with a customer;
- ii) the costs generate or enhance our resources that will be used in satisfying (or in continuing to satisfy) performance obligations in the future; and
- iii) the costs are expected to be recovered.

Software Development Costs

Research expenditures incurred in the process of software development are recognized in profit or loss when incurred. An intangible asset arising from a software development project or from the development phase of an internal project is recognized if we can demonstrate: the technical feasibility of completing the intangible asset so that it will be available for use or sale; our intention to complete the intangible asset and use or sell it; the ability to use or sell the intangible asset; how the intangible asset will generate future economic benefits; the availability of adequate technical, financial and other resources to complete the intangible asset; and the ability to measure reliably the respective expenditure asset during its development. We establish technological feasibility upon completion of a detailed program design or working model.

Research and development costs incurred between completion of the detailed program design and the point at which the product is ready for general release, have been capitalized.

Capitalized software costs are measured at cost, less any accumulated amortization and any accumulated impairment losses on a product by product basis. Amortization of capitalized software costs begin when development is complete and the product is available for use. We consider a product to be available for use when we complete the internal validation of the product that is necessary to establish that the product meets its design specifications including functions, features, and technical performance requirements. Internal validation includes the completion of coding, documentation and testing that ensure bugs are reduced to a minimum. The internal validation of the product takes place a few weeks before the product is made available to the market. In certain instances, we enter into a short pre-release stage, during which the product is made available to a select number of customers as a beta program for their own review and familiarization. Subsequently, the release is made generally available to customers. Once a product is considered available for use, the capitalization of costs ceases and amortization of such costs to "cost of sales" begins.

Capitalized software costs are amortized on a product by product basis by the straight-line method over the estimated useful life of the software product (between 5-7 years).

Research and development costs incurred in the process of developing product enhancements are generally charged to expenses as incurred.

We assess the recoverability of our capitalized software costs on a regular basis by assessing the net realizable value of these intangible assets based on the estimated future gross revenues from each product reduced by the estimated future costs of completing and disposing of it, including the estimated costs of performing maintenance and customer support over its remaining economical useful life using internally generated projections of future revenues generated by the products, cost of completion of products and cost of delivery to customers over its remaining economical useful life. During the years ended December 31, 2017 and 2018, no such unrecoverable amounts were identified.

Other intangible assets

Separately-acquired intangible assets are measured on initial recognition at cost including directly attributable costs. Intangible assets acquired in a business combination are measured at fair value at the acquisition date. Expenditures relating to internally generated intangible assets, excluding capitalized development costs, are recognized in profit or loss when incurred.

Intangible assets with a finite useful life are amortized over their useful life and reviewed for impairment whenever there is an indication that the asset may be impaired. The amortization period and the amortization method for an intangible asset are reviewed at least at each year end.

Other intangible assets are comprised mainly of customer-related intangible assets, backlogs, brand names, capitalized courses development costs, non-compete agreements and acquired technology and patent, and are amortized over their useful lives using a method of amortization that reflects the pattern in which the economic benefits of the intangible assets are consumed or otherwise used up. The useful life of intangible assets is as follows:

	<u>Years</u>
Customer relationship and backlog	1-15
Acquired technology	2-8
Brand names and patents	5-10

Gains or losses arising from the derecognition of an intangible asset are determined as the difference between the net disposal proceeds and the carrying amount of the asset, and are recognized in the statement of profit or loss.

The useful life of these assets is reviewed annually to determine whether their indefinite life assessment continues to be supportable. If the events and circumstances do not continue to support the assessment, the change in the useful life assessment from indefinite to finite is accounted for prospectively as a change in accounting estimate and on that date the asset is tested for impairment. Commencing from that date, the asset is amortized systematically over its useful life.

Taxes on income:

Current or deferred taxes are recognized in profit or loss, except to the extent that they relate to items which are recognized in other comprehensive income or equity.

i. Current taxes:

The current tax liability is measured using the tax rates and tax laws that have been enacted or substantively enacted by the reporting date as well as adjustments required in connection with the tax liability in respect of previous years.

ii. Deferred taxes:

Deferred taxes are computed in respect of temporary differences between the carrying amounts in the financial statements and the amounts attributed for tax purposes. Deferred taxes are measured at the tax rate that is expected to apply when the asset is realized or the liability is settled, based on tax laws that have been enacted or substantively enacted by the reporting date. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is not probable that they will be utilized. Deductible carry forward losses and temporary differences for which deferred tax assets had not been recognized are reviewed at each reporting date and a respective deferred tax asset is recognized to the extent that their utilization is probable.

Taxes that would apply in the event of the disposal of investments in investees have not been taken into account in computing deferred taxes, as long as the disposal of the investments in investees is not probable in the foreseeable future. Also, deferred taxes that would apply in the event of distribution of earnings by investees as dividends have not been taken into account in computing deferred taxes, since the distribution of dividends does not involve an additional tax liability or since it is our policy not to initiate distribution of dividends from a subsidiary that would trigger an additional tax liability.

Taxes on income that relate to distributions of an equity instrument and to transaction costs of an equity transaction are accounted for pursuant to IAS 12.

Deferred taxes are offset if there is a legally enforceable right to offset a current tax asset against a current tax liability and the deferred taxes relate to the same taxpayer and the same taxation authority.

Impairment of non-financial assets:

We evaluate the need to record an impairment of non-financial assets (property, plant and equipment, capitalized software costs and other intangible assets, goodwill, investments in joint venture) whenever events or changes in circumstances indicate that the carrying amount is not recoverable.

If the carrying amount of non-financial assets exceeds their recoverable amount, the assets are reduced to their recoverable amount. The recoverable amount is the higher of fair value less costs of sale and value in use. In measuring value in use, the expected future cash flows are discounted using a pre-tax discount rate that reflects the risks specific to the asset. The recoverable amount of an asset that does not generate independent cash flows is determined for the cash-generating unit to which the asset belongs. Impairment losses are recognized in profit or loss.

An impairment loss of an asset, other than goodwill, is reversed only if there have been changes in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognized. Reversal of an impairment loss, as above, shall not be increased above the lower of the carrying amount that would have been determined (net of depreciation or amortization) had no impairment loss been recognized for the asset in prior years and its recoverable amount. The reversal of impairment loss of an asset presented at cost is recognized in profit or loss.

The following criteria are applied in assessing impairment of these specific assets:

i. Goodwill in respect of subsidiaries:

For the purpose of impairment testing, goodwill acquired in a business combination is allocated, at the acquisition date, to each of our cash-generating units that are expected to benefit from the synergies of the combination.

We review goodwill for impairment once a year, on December 31, or more frequently if events or changes in circumstances indicate that there is an impairment.

Goodwill is tested for impairment by assessing the recoverable amount of the cash-generating unit (or group of cash-generating units) to which the goodwill has been allocated. An impairment loss is recognized if the recoverable amount of the cash-generating unit (or group of cash-generating units) to which goodwill has been allocated is less than the carrying amount of the cash-generating unit (or group of cash-generating units). Any impairment loss is allocated first to goodwill. Impairment losses recognized for goodwill cannot be reversed in subsequent periods.

ii. Investment in associate or joint venture using the equity method:

After application of the equity method, we determine whether it is necessary to recognize any additional impairment loss with respect to the investment in associates or joint ventures. We determine at each reporting date whether there is an objective evidence that the carrying amount of the investment in the associate or the joint venture is impaired. The test of impairment is carried out with reference to the entire investment, including the goodwill attributed to the associate or the joint venture.

iii. Intangible assets with an indefinite useful life:

The impairment test is performed annually, on December 31, or more frequently if events or changes in circumstances indicate that there is an impairment.

During the years ended December 31, 2017 and 2018, no impairment indicators were identified.

Financial instruments:

In July 2014, the IASB issued the final and complete version of IFRS 9 - Financial Instruments ("IFRS 9"), which replaces IAS 39 - Financial Instruments: Recognition and Measurement. IFRS 9 mainly changes the provisions of the classification and measurement of financial assets and applies to all financial assets within the scope of IAS 39. The new standard is first implemented in our financial statements included in Item 18 of this annual report. The new standard is applied retrospectively without restatement of comparative figures.

After examining the implications of implementing the new standard, its implementation did not have a material effect on our financial statements.

A. Financial assets:

Financial assets within the scope of the standard are measured at the date of initial recognition at their fair value, plus transaction costs that can be directly attributed to the acquisition of the financial asset. Except in the case of a financial asset measured at fair value through profit or loss, in respect of which, transaction costs are charged to profit or loss.

We classify and measure the debt instruments in our financial statements on the basis of the following criteria:

- our business model for the management of financial assets; and
 - the contractual cash flow characteristics of the financial asset.
- i) We measure debt instruments at amortized cost when:

our business model is the holding of financial assets in order to collect contractual cash flows, and the contractual terms of the financial asset provide entitlement on defined dates to cash flows, that are only principal and interest payments in respect of the amount of the principal, that has not yet been repaid. Subsequent to initial recognition, instruments in this group shall be presented at their cost, at cost plus transaction costs, directly using the amortized cost method. In addition, on the date of initial recognition, an entity may designate a debt instrument at fair value through profit or loss, if such designation eliminates or significantly reduces inconsistencies in measurement or recognition, for example, if the related financial liabilities, are also measured at fair value through profit or loss.

- ii) We measure debt instruments at fair value through other comprehensive income when:

our business model is the holding of financial assets in order to collect contractual cash flows and the sale of the financial assets and the contractual terms of the financial asset provide entitlement on defined dates to cash flows that are only principal and interest payments in respect of the amount of the principal that has not yet been repaid. Subsequent to initial recognition, instruments in this group are measured at fair value. Gains or losses arising from adjustments to fair value, other than interest and exchange rate differentials, are recognized in other comprehensive income.

B. Impairment of financial assets:

We examine at each reporting date the provision for loss in respect of financial debt instruments that are not measured at fair value through profit or loss. We distinguish between two situations of recognition of a provision for loss:

- i. Debt instruments for which there has been no significant deterioration in the quality of their credit since the initial recognition or in cases where the credit risk is low – in this situation, the provision for loss recognized for this debt instrument will take into account expected credit losses in a period of 12 months after the reporting date;
- ii. Debt instruments whose credit quality has deteriorated significantly since their initial recognition and for which the credit risk is not low—in this situation, the provision for a loss to be recognized will take into account projected credit losses - over the remaining life of the instrument.

We have financial assets with short credit periods, such as customers, for which we apply the relief prescribed in the model. In other words, we measure the provision for loss in an amount equal to expected credit losses throughout the life of the instrument.

Impairment in respect of debt instruments measured at amortized cost, will be carried to profit or loss against provision, while impairment in respect of debt instruments measured at fair value through other comprehensive income, will be carried to profit or loss against other comprehensive income, and will not reduce the book value of the financial asset in the statement of financial position.

We implement the relief prescribed in the standard, according to which it assumes that the credit risk of a debt instrument did not increase significantly from the date of initial recognition if it was determined at the reporting date that the instrument has a low credit risk, for example when the instrument has an external rating of “investment grade”.

C. Derecognition of financial assets:

We derecognize a financial asset when and only when:

- i. The contractual rights to the cash flows from the financial asset expire;
- ii. We transfer substantially all the risks and rewards deriving from the contractual rights to receive the cash flows from the financial asset or when some of the risks and rewards of transferring the financial asset remain with the entity but it may be said that it transferred the control over the asset; and
- iii. We retain the contractual rights to receive the cash flows arising from the financial asset but assumes a contractual obligation to pay these cash flows in full to a third party, without material delay.

D. Financial liabilities:

i. Financial liabilities measured at amortized cost:

Financial liabilities are initially recognized at fair value less transaction costs that are directly attributable to the issue of the financial liability. After initial recognition, we measure all financial liabilities at amortized cost using the effective interest rate method, except for:

- Financial liabilities at fair value through profit or loss, such as derivatives;
- Financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies;
- Financial guarantee contracts;
- Contingent consideration recognized by an acquirer in a business combination, as to which IFRS 3 applies.

ii. Financial liabilities measured at fair value through profit or loss:

At initial recognition, we measure financial liabilities that are not measured at amortized cost at fair value. Transaction costs are recognized in profit or loss. After initial recognition, changes in fair value are recognized in profit or loss.

E. Derecognition of financial liabilities:

A financial liability is derecognized when it is extinguished, that is when the obligation is discharged or cancelled or expires. A financial liability is extinguished when the debtor discharges the liability by paying in cash, other financial assets, goods or services or is legally released from the liability.

When there is a modification in the terms of an existing financial liability, we evaluate whether the modification is substantial.

If the terms of an existing financial liability are substantially modified, such modification is accounted for as an extinguishment of the original liability and the recognition of a new liability. The difference between the carrying amounts of the above liabilities is recognized in profit or loss.

If the modification is not substantial, we recalculate the carrying amount of the liability by discounting the revised cash flows at the original effective interest rate and any resulting difference is recognized in profit or loss.

When evaluating whether the modification in the terms of an existing liability is substantial, we consider both quantitative and qualitative factors

F. Offsetting financial instruments

Financial assets and financial liabilities are offset and the net amount is presented in the statement of financial position if there is a legally enforceable right to set off the recognized amounts and there is an intention either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The right of set-off must be legally enforceable not only during the ordinary course of business of the parties to the contract but also in the event of bankruptcy or insolvency of one of the parties. In order for the right of set-off to be currently available, it must not be contingent on a future event, there may not be periods during which the right is not available, or there may not be any events that will cause the right to expire.

G. Put option granted to non-controlling interests:

When we grant to non-controlling interests a put option to sell part or all of their interests in a subsidiary, during a certain period, even if such purchase obligation is conditional on the counterparty's exercise of its contractual right to cause such redemption, if the put option agreement does not transfer to us any benefits incidental to ownership of the equity instrument (i.e., we do not have a present ownership in the shares concerned) then at the end of each reporting period the non-controlling interests (to which a portion of net profit attributable to non-controlling interests is allocated) are classified as a financial liability, as if such put-able equity instrument was redeemed on that date. The difference between the non-controlling interests carrying amount at the end of the reporting period and the present value of the liability is recognized directly in equity, under "Additional paid-in capital".

We remeasure the financial liability at the end of each reporting period based on the estimated present value of the consideration to be transferred upon the exercise of the put option.

If the option is exercised in subsequent periods, the consideration paid upon exercise is treated as settlement of the liability. If the option expires, the liability is settled and it is a portion of the investment in the subsidiary disposed of, without loss of control therein.

If we have present ownership of the non-controlling interests, those non-controlling interests are accounted for as if they are held by us, and changes in the amount of the liability are carried to profit or loss.

Disclosure of new standards in the period prior to their adoption

1. Amendments to IFRS 10 and IAS 28 regarding sale or transfer of assets between an investor and its associate or joint venture:

In September 2014, the IASB issued amendments to IFRS 10 and IAS 28 (which we refer to as the Amendments) regarding the accounting treatment of the sale or transfer of assets (an asset, a group of assets or a subsidiary) between an investor and its associate or joint venture.

Under the Amendments, when an investor loses control of a subsidiary or a group of assets that are not a business in a transaction with its associate or joint venture, the gain will be partially eliminated such that the gain to be recognized is the gain from the sale to the other investors in the associate or joint venture. According to the Amendments, if the remaining rights held by the investor represent a financial asset as defined in IFRS 9, the gain will be recognized in full.

If the transaction with an associate or joint venture involves loss of control of a subsidiary or a group of assets that are a business, the gain will be recognized in full.

The Amendments are to be applied prospectively. A mandatory effective date has not yet been determined by the IASB but early adoption is permitted.

2. **IFRS 16, "Leases"**:

In January 2016, the IASB issued IFRS 16, "Leases" (which we refer to as IFRS 16). According to IFRS 16, a lease is a contract, or part of a contract, that conveys the right to use an asset for a period of time in exchange for consideration.

Under IFRS 16:

- Lessees are required to recognize an asset and a corresponding liability in the statement of financial position in respect of all leases (except in certain cases) similar to the accounting treatment of finance leases according to the existing IAS 17, "Leases".
- Lessees are required to initially recognize a lease liability for the obligation to make lease payments and a corresponding right-of-use asset. Lessees will also recognize interest and depreciation expense separately.
- Variable lease payments that are not dependent on changes in the Consumer Price Index, or CPI, or interest rates, but are based on performance or use (such as a percentage of revenues) are recognized as an expense by the lessees as incurred and recognized as income by the lessors as earned.
- In the event of change in variable lease payments that are CPI-linked, lessees are required to remeasure the lease liability and the effect of the remeasurement is an adjustment to the carrying amount of the right-of-use asset.
- IFRS 16 includes two exceptions according to which lessees are permitted to elect to apply a method similar to the current accounting treatment for operating leases. These exceptions are leases for which the underlying asset is of low value and leases with a term of up to one year.
- The accounting treatment by lessors remains substantially unchanged, namely classification of a lease as a finance lease or an operating lease.

IFRS 16 is effective for annual periods beginning on or after January 1, 2019 and we expect its adoption to have a material impact on our consolidated statements of financial position.

IFRS 16 permits lessees to use one of the following approaches:

1. Full retrospective approach - according to this approach, a right-of-use asset and the corresponding liability will be presented in the statement of financial position as if they had always been measured according to the provisions of IFRS 16 with the effect of the adoption at the beginning of the earliest period presented will be recorded in equity.

2. Modified retrospective approach - this approach does not require restatement of comparative data. The balance of the liability as of the date of initial application of IFRS 16 will be calculated using the lessee's incremental borrowing rate of interest on the date of the initial application of IFRS 16. As for the measurement of the right-of-use asset, we may choose, on a lease-by-lease basis, to apply one of the two following alternatives:
 - i. Recognize an asset in an amount equal to the lease liability, with certain adjustments.
 - ii. Recognize an asset as if IFRS 16 had always been applied.

We believe that we will apply the modified retrospective approach upon the initial adoption of IFRS 16, whereby the right-of-use asset in certain real-estate leases will be measured as if the new standard had always been applied, while the right-of-use assets in respect of other leases will be measured at an amount equal to the lease liability, as measured on the transition date.

We have leases mainly of real estate and vehicles in a significant amount. In assessing the impact of IFRS 16 on our financial statements, we are evaluating the following matters:

Options to extend the lease - In accordance with IFRS 16, the non-cancellable periods of leases include periods that are covered by options to extend the leases if the lessees are reasonably certain to exercise the option. We are reviewing whether such options exist in its lease agreements and whether it is reasonably certain that it will exercise the options. As part of our assessment, we are evaluating all relevant facts and circumstances that create an economic incentive to exercise the options, including significant leasehold improvements that have been or are expected to be undertaken, the importance of the underlying assets to our operations and past experience in connection with the exercise of such options.

Separation of contract components - In accordance with IFRS 16, all lease components within a contract should be accounted for separately from non-lease components. A lessee is allowed a practical expedient according to which it can elect, by class of underlying asset, not to separate non-lease components from lease components, and instead account for them as a single lease component. We are reviewing whether such non-lease components, such as management and maintenance services, exist in its current lease contracts and whether the above practical expedient should be applied to each class of underlying asset.

Interest on capitalization - We estimate the incremental interest rate to be used for measuring our lease liabilities and right-of-use assets on the date of initial adoption of IFRS 16, based on the leases' terms and nature of the leased assets.

We are also evaluating the need for making adjustments to our information systems, internal controls, policies and procedures that will be necessary in order to apply the provisions of IFRS 16.

We estimate that the effect of the initial implementation of IFRS 16 as of January 1, 2019 is expected to result in an increase in our total assets in an amount of approximately \$108.8 million and an increase in our total liabilities in the amount of approximately \$111. million, and a decrease in the balance of our shareholders' equity in an amount of \$2.3 million.

We estimate that the implementation of the new standard will not have an impact on our compliance with our financial covenants under our outstanding debenture series.

The above quantitative disclosure relates to the known effects as at that date and in accordance with the existing lease contracts in effect as of January 1, 2019.

A. Operating Results**Year Ended December 31, 2018 Compared to Year Ended December 31, 2017**

The following tables set forth certain data from our statement of profit or loss for the years ended December 31, 2017 and 2018, as well as such data as a percentage of our revenues for those years. The data has been derived from our audited consolidated financial statements included elsewhere in this annual report. The operating results for the below years should not be considered indicative of results for any future period. This information should be read in conjunction with the audited consolidated financial statements and notes thereto included in this annual report.

**Statements of Profits or Loss
(U.S. dollars, in thousands)**

	Year ended December 31,	
	2017	2018
Revenues	1,355,139	1,492,988
Cost of revenues	1,058,316	1,159,676
Gross profit	296,823	333,312
Research and development expenses, net	39,853	41,223
Selling, marketing, general and administrative expenses	184,164	182,472
Operating income	72,806	109,617
Financial expenses	(29,870)	(15,852)
Financial income	8,751	7,562
Pre-tax income before share of profits of companies accounted for at equity, net	51,687	101,327
Taxes on income	13,371	24,301
Share of profits of companies accounted for at equity, net	1,124	369
Net income	\$ 39,440	\$ 77,395
Attributable to:		
Equity holders of the Company	10,352	32,365
Non-controlling interests	29,088	45,030
	\$ 39,440	\$ 77,395

**Statement of Profits or Loss as a
Percentage of Revenues**

	Year ended December 31,	
	2017	2018
Revenues	100%	100%
Cost of revenues	78%	78%
Gross profit	22%	22%
Research and development expenses, net	3%	3%
Selling, marketing, general and administrative expenses	14%	12%
Operating income	5%	7%
Financial expenses	(2)%	(1)%
Financial income	1%	1%
Pre-tax income before share of profits of companies accounted for at equity, net	4%	7%
Taxes on income	1%	2%
Group's share of earnings of companies accounted for at equity, net	0%	0%
Net income	3%	5%
Attributable to:		
Equity holders of the Company	1%	2%
Non-controlling interests	2%	3%

Revenues. Revenues in 2018 increased by 10%, from \$1,355.1 million in 2017 to \$1,493.0 million in 2018. Revenues from the two categories of our operations were as follows: revenues from the delivery of software services increased by 11%, from \$ 1,013.8 million in 2017 to \$1,123.0 million in 2018, and revenues from the sale of our proprietary software products and related services increased by 8%, from \$ 341.4 million in 2017 to \$ 370.0 million in 2018.

The increase in software services revenues was recorded across the following of our investees reporting under this revenue stream— Matrix, Magic Software, Insync and Michpal— and was primarily due to growth in their revenues as described below:

Matrix:

Matrix's revenues increased from NIS 2,857.1 million (approximately \$794.6 million) in 2017 to NIS 3,168.0 million (approximately \$881.1 million) in 2018, reflecting an increase of 11% when measured in NIS, Matrix's local currency (compared to 11% when measured in U.S dollars). The increase in Matrix's revenues was due to an increase in all of Matrix's principal areas of operations and due to the inclusion for the first time of Alius Corp. (consolidated as of January 2018), PVBS (consolidated as of March 2018) and Integrity (consolidated as of August 2018) for the full year. The increase was primarily attributable to an increase of 10% in Matrix's software solutions and services in its Israeli business line from NIS 1,759.5 million (approximately \$489.3 million) in 2017 to NIS 1,928.8 million (approximately \$ 536.4 million) in 2018. The increase was furthermore due to: an increase of 21% in Matrix's Software solutions and services revenues in the United States from NIS 327.0 million (approximately \$91.0 million) in 2017 to NIS 396.9 million (approximately \$110.4 million) in 2018; an increase of 10% in Matrix's computer infrastructure and integration solutions from NIS 480.5 million (approximately \$133.6 million) in 2017 to NIS 529.7 million (approximately \$ 147.3 million) in 2018; and an increase of 17% in Matrix's Software product marketing and support from NIS 127.4 million (approximately \$35.4 million) in 2017 to NIS 149.0 million (approximately \$41.4 million) in 2018.

Magic Software:

Magic Software's revenues, reported under this revenue stream, increased by 10% from \$191.8 million to \$211.6 million, primarily attributable to (i) increased demand for the professional services offerings in Israel by Comblack IT Ltd, and in the U.S by all of our U.S subsidiaries' and (ii) the inclusion of Futurewave Systems Inc. (consolidated as of January 2018) for the full year in 2018.

InSync:

InSync's revenues increased by 5% from \$33.1 million in 2017 to \$34.6 million in 2018.

The increase in revenues from proprietary software products and related services was attributable in part to the inclusion for the first time of Adaptik (consolidated as of March 2018), Knowledgeprice (consolidated as of December 2017) and StoneRiver (consolidated as of February 2017) and to the following results involving Sapiens and Magic Software:

Sapiens:

Sapiens' revenues increased from \$269.2 million in 2017 to \$289.7 million in 2018, reflecting an increase of 7.6%. The net increase in revenues of approximately \$20.5 million for the year ended December 31, 2018 was attributable to additional revenues from acquired entities, which contributed \$32.9 million towards that increase, primarily from the acquisition of Knowledgeprice, which was completed on December 31, 2017, the acquisition of Adaptik, which was completed in March 2018, and the inclusion of StoneRiver's revenues for the first two months of 2018, since StoneRiver was consolidated starting March 1, 2017. The increase is partially offset by decreases in revenues in an aggregate amount of \$17.8 million due to a material reduction in services ordered by a customer in South Africa, and to our downsizing of our non-insurance and financial services activities in Japan, which started in 2017 and continued into 2018.

Magic Software:

Magic Software's revenues, reported under this revenue stream, increased by 9.8% from \$66.3 million in 2017 to \$72.8 million in 2018. The increase in Magic Software's revenues was attributable to (i) increased demand for the Magic proprietary packaged and third party software solutions primarily attributable to a significant increase in third party software solutions ordered by Israeli customers and (ii) increased demand for the Magic xpa Development Platform and magic xpi Integration Platform, which grew by 16% compared to 2017.

A breakdown of our overall revenues into proprietary software products and related services and software services revenues for the years ended December 31, 2017 and 2018, the percentage those respective categories of revenues constituted out of our total revenues in those years, and the percentage change for each such category of revenues from 2017 to 2018, are provided in the below table:

Revenue category	Year ended December 31, 2017		Year-over Year change (\$ in thousands)	Year ended December 31, 2018	
	Revenues	Percentage		Revenues	Percentage
Proprietary software products and related services	341,350	25.19%	8.4%	370,027	24.78%
Software services	1,013,789	74.81%	10.77%	1,122,961	75.22%
Total	1,355,139	100%	10.17%	1,492,988	100%

Revenues by geographical region

The dollar amount of our revenues attributable to each of the geographical regions in which we conduct our operations for the years ended December 31, 2017 and 2018, respectively, were as follows:

	Year ended December 31,	
	2017	2018
	(\$ in thousands)	
Israel	\$ 846,298	\$ 893,605
International:		
United States	322,892	418,148
Europe	131,025	141,316
Africa	24,370	13,726
Japan	15,763	11,053
Other (mainly Asia pacific)	14,791	15,140
Total	\$ 1,355,139	\$ 1,492,988

Cost of Revenues Cost of revenues consists primarily of wages, personnel expenses, other personnel-related expenses of software consultants, subcontractors and engineers, royalties and licenses payable to third parties, amortization of capitalized software, and hardware and other materials costs. Cost of revenues increased by 10% from \$1,058.3 million in 2017 to \$1,159.7 million in 2018. As a percentage of total revenues, costs of revenues in 2017 and 2018 were 78.1% and 77.8%, respectively.

Our proprietary software solutions and related services sales are generally characterized by a higher gross margin than sales of our software services. The cost of revenues for proprietary software solutions and related services increased from \$201.3 million in 2017 to \$207.9 million in 2018. As a percentage of our proprietary software solutions and related services revenues, costs of revenues for proprietary software solutions and related services increased to 56.2% in 2018 compared to 59.3% in 2017.

The cost of revenues for software services increased from \$857.0 million in 2017 to \$951.8 million in 2018. As a percentage of software services revenues, costs of revenues for software services in 2017 and 2018 remained relatively stable at 84.8% in 2018 compared to 84.4% in 2017.

The increase in our cost of revenues was attributable in part to the inclusion for the first time of Alius Corp. (consolidated as of January 2018); PVBS (consolidated as of March 2018); Integrity (consolidated as of August 2018); Futurewave Inc (consolidated as of December 2017); Adaptik (consolidated as of March 2018); Knowledgeprice (consolidated as of December 2017); and StoneRiver (consolidated as of February 2017), and to the following increases involving Matrix, Sapiens and Magic Software:

Matrix:

Matrix's cost of revenues increased by 11% from \$677.7 million in 2017 to \$751.8 million in 2018. The increase in absolute cost of revenues was related to the increase in Matrix's revenues during the year ended December 31, 2018 relative to the year ended December 31, 2017. The level of Matrix's cost of revenues as a percentage of its revenues has consistently increased slightly in recent years from 84% and 84.6% in 2015 and 2016, respectively, to 85.3% in 2017 and in 2018. The increase in Matrix's cost of revenues as a percentage of its revenues as recorded in U.S. dollars was primarily attributable to continual increases in employee salaries in Israel and in the U.S.

Sapiens:

Sapiens' cost of revenues increased by \$4.2 million, or 2.5%, to \$179.8 million for the year ended December 31, 2018, as compared to \$175.8 million for the year ended December 31, 2017 (when measured in accordance with IFRS). Cost of revenues decreased as a percentage of revenues during the year ended December 31, 2018, to 62.1% as compared to 65.3% during the year ended December 31, 2017. The increase in absolute cost of revenues of \$4.2 million was primarily attributable to an increase in cost of revenues of acquired companies (i.e., those acquired in 2017 and 2018) totaling \$17.7 million, offset mainly by a decrease due to Sapiens' cost reduction program, which was implemented in 2017 in the United States, Israel and the UK (and which reduced cost of revenue in 2018), in addition to an increase in Sapiens' offshore operations, which also reduced cost of revenues in 2018. The 320 basis points decrease in the cost of revenues as a percentage of Sapiens' revenues was primarily attributable to the above-described cost reduction program and increase in offshore activities, which further contributed to Sapiens' cost efficiency.

Magic Software:

Magic Software's cost of revenues increased by 12% from \$175.2 million in 2017 to \$195.6 million in 2018. The increase in cost of revenues was primarily attributable to: (i) the inclusion of Futureware Systems Inc for the full year (consolidated as of December 2017); and (ii) an increase in professional services, consistent with the increase in Magic Software's revenues, mainly related to IT consulting services.

Cost of revenues for the years ended December 31, 2018 and 2017 include insignificant amounts of stock-based compensation.

Research and Development Expenses, net. Research and development, or R&D, expenses consist primarily of wages and related expenses and, to a lesser degree, consulting fees that we pay to employees and independent contractors, respectively, engaged in research and development. Research and development expenses, net, consist of research and development expenses, gross, less capitalized software costs.

Research and development expenses, gross, increased from \$49.4 million in 2017 to \$50.1 million in 2018, mainly due to increased investment in Sapiens research and development from \$37.5 million in 2017 to \$39.6 million in 2018 due to activities in support of the expansion of its offering of solutions in the year ended December 31, 2018, offset by (i) a decrease in Magic Software's research and development expenses, gross, from \$10.7 million in 2017 to \$9.4 million in 2018, resulting from a cost reduction program which was implemented by Magic Software in Israel, and (ii) an increase in Magic Software offshore activities which further contributed to its cost efficiency. In 2018, we capitalized software costs of \$8.9 million, compared to \$9.6 million in 2017. Capitalization of software costs in 2017 and 2018 was attributable to our subsidiaries engaged in providing proprietary software solutions (i.e., Magic Software and certain of its subsidiaries, Sapiens and certain of its subsidiaries and Michpal). Research and development expenses, net, increased from \$39.9 million in 2017 to \$41.2 million in 2018, mainly due to the factors described above.

As a percentage of revenues, research and development expenses, net, remained relatively stable at 2.8% in 2018 compared to 2.9% in 2017. Research and development expenses for the years ended December 31, 2018 and 2017 include insignificant amounts of stock-based compensation.

Selling, Marketing General and Administrative Expenses. Selling, marketing, general and administrative, or SMG&A, expenses consist primarily of cost of salaries, severance and related expenses of sales, marketing, management and administrative employees, travel expenses, selling expenses, rent, utilities, communications expenses, expenses related to external consultants, depreciation, amortization and other expenses. Selling, marketing, general and administrative expenses decreased from \$184.2 million in 2017 to \$182.5 million in 2018. As a percentage of revenues, SMG&A decreased from 13.6% in 2017 compared to 12.2% in 2018.

The decrease in the cost of SMG&A was mainly attributable to the decrease in Sapiens' cost of SMG&A from \$60.3 million in 2017 to \$52.4 million in 2018, reflective of the non-recurring SG&A expense recognized in the second and fourth quarters of 2017 in an amount of \$8.1 million due to cost reduction and reorganization plans, which expense was not repeated in 2018, as offset in part by an increase in Magic Software's and Matrix's cost of SMG&A by \$1.3 million and \$5.4 million, respectively, in 2018 compared to 2017.

Matrix:

Matrix's SMG&A expenses increased to \$68.0 million for the year ended December 31, 2018 compared to \$62.6 million for the year ended December 31, 2017, representing an increase of \$5.4 million. This increase was mainly attributable to: (i) amortization costs of intangible assets, which amounted to \$3.2 million compared to \$2.2 million in 2017, as a result of the inclusion for the first time of Alius Corp. (consolidated as of January 2018), PVBS (consolidated as of March 2018) and Integrity (consolidated as of August 2018); (ii) \$1.2 million recorded with respect to a change in value of contingent consideration related to acquisitions; (iii) increase in employee stock-based compensation costs, which amounted to \$1.6 million compared to \$0.7 million in 2017, with the remaining increase recorded consistently with the increase in Matrix's revenues. As a percentage of revenues, Matrix's SMG&A expenses, remained relatively stable at 7.7% in 2018 compared to 7.9% in 2017.

Sapiens:

Sapiens' SMG&A expenses, which are primarily comprised of compensation expense for employees and subcontractors, were \$52.4 million for the year ended December 31, 2018 compared to \$60.3 million for the year ended December 31, 2017, representing a decrease of \$7.9 million. The decrease was primarily reflective of the non-recurring SG&A expense recognized in the second and fourth quarters of 2017 in an amount of \$8.1 million due to cost reduction and reorganization plans, which expense was not repeated in 2018. The aforementioned second phase of Sapiens' cost reduction and reorganization plan further contributed to its reduction in 2018 SG&A expenses on a full-year basis. Those reductions in SG&A were offset in part by an increase in SG&A in an amount of \$6.8 million attributable to newly acquired entities.

Magic Software:

Magic Software's SMG&A expenses increased to \$51.4 million for the year ended December 31, 2018 compared to \$50.1 million for the year ended December 31, 2017, representing an increase of \$1.3 million. This increase was mainly attributable to: (i) an increase in legal expenses in 2018 compared to 2017; and (ii) a decrease in income recorded due to contingent liabilities as part of a business combination that did not meet its conditions from \$0.8 million recorded in 2017 to \$0.2 million recorded in 2018.

Selling, marketing general and administrative expenses for the years ended December 31, 2017 and 2018 included in each of the two years \$4.0 million of stock-based compensation expenses.

Operating Income. Our operating income increased from \$72.8 million in 2017 to \$109.6 million in 2018. As a percentage of revenues, our operating income increased from 5.4% in 2017 to 7.3% in 2018. The increase in our operating income during the year ended December 31, 2018 relative to the year ended December 31, 2017 as an absolute amount was attributable to the various gross profit and operating expenses trends described above.

Financial Expenses, net. Financial expenses decreased from \$29.9 million in 2017 to \$15.9 million in 2018. Financial expenses, net decreased from \$21.1 million in 2017 to \$8.3 million in 2018. Financial expenses are influenced by various factors, including: our cash balances; loan balances; outstanding debentures; changes in market value of trading marketable securities; changes in liabilities related to business combinations; changes in the exchange rate of the NIS against the dollar; changes in the exchange rate of the dollar against the Euro; and changes in the Israeli consumer price index, or CPI. The decrease in net financial expenses in 2018 was primarily attributable to: (i) financial income of \$4.0 million recorded during the year ended December 31, 2018 compared to financial expenses of \$6.5 million recorded during the year ended December 31, 2017 with respect to the revaluation of Formula's Series A Secured Debentures, which are linked to the NIS, due to the appreciation of the US dollar relative to the NIS in 2018; (ii) a decrease in Magic Software financial expenses, net to financial income of \$0.1 million recorded during the year ended December 31, 2018 compared to financial expenses of \$1.7 million recorded during the year ended December 31, 2017 with respect to the revaluation of Magic Software's loan from a financial institution, which is linked to the NIS, primarily attributable to the appreciation of the US dollar relative to the NIS in 2018; and (iii) a decrease in Matrix financial expenses, net to \$4.5 million recorded during the year ended December 31, 2018 compared to \$5.9 million recorded during the year ended December 31, 2017, mainly with respect to financial income of \$0.7 million recorded during the year ended December 31, 2018 compared to financial expenses of \$0.2 million recorded during the year ended December 31, 2017 with respect to exchange rate differences resulting from the appreciation of the US dollar relative to the NIS in 2018. The decrease in financial expenses during 2018 was offset in part by an increase in Sapiens' net financial expenses to \$4.0 million for the year ended December 31, 2018 compared to financial expense of \$3.0 million in the year ended December 31, 2017, which was attributable to Sapiens' debentures that it initially issued and sold in September 2017 and which were outstanding throughout 2018 and which contributed towards the increase in financial expenses in an amount of \$2 million in 2018, offset, in part, by a decrease in Sapiens' financial expenses due to the repayment in 2017 of a long-term loan that was outstanding for a six-month period during 2017, and which contributed \$0.7 million towards financial expenses in 2017.

Equity in gains of affiliated companies net. Our equity in gains of affiliated companies, net, decreased from \$1.1 million in 2017 to \$369,000 in 2018. Our equity in gains of affiliates in 2018 was attributable to TSG.

Taxes on Income. Taxes on income increased from \$13.4 million in 2017 to \$24.3 million in 2018. The increase in our expense from taxes on income was primarily attributable to Sapiens' shift to a net tax expense of \$3.6 million resulting from its higher taxable income in 2018 compared to 2017. In 2017, Sapiens had an income tax benefit of \$5.6 million that was primarily attributable to the one-time effect of \$3.8 million of tax benefit resulting from the remeasurement of its deferred tax liability in respect of its US subsidiaries due to a decrease in the federal corporate income tax rate following the enactment of the U.S. Tax Act in December 2017.

Net income attributable to non-controlling interests. Net income attributable to non-controlling interests includes the non-controlling interests held by other shareholders in our consolidated companies, which were not wholly owned by Formula during each of the periods indicated. Net income attributable to non-controlling interests increased from \$29.1 million in 2017 to \$45.0 million in 2018, mainly due to: (i) the increase in Sapiens' net income attributable to its shareholders, from \$2.4 million of net loss recorded during the year ended December 31, 2017 to \$9.0 million of net income attributable to its shareholders during the year ended December 31, 2018; (ii) the increase in Magic Software's net income attributable to its shareholders from \$15.4 million recorded during the year ended December 31, 2017 to \$19.9 million recorded during the year ended December 31, 2018; and (iii) the increase in Matrix's net income attributable to its shareholders from \$33.2 million recorded during the year ended December 31, 2017 to \$39.0 million during the year ended December 31, 2018.

Year Ended December 31, 2017 Compared to Year Ended December 31, 2016

The following tables set forth certain data from our statement of profit or loss for the years ended December 31, 2016 and 2017, as well as such data as a percentage of our revenues for those years. The data has been derived from our audited consolidated financial statements included elsewhere in this annual report. The operating results for the below years should not be considered indicative of results for any future period. This information should be read in conjunction with the audited consolidated financial statements and notes thereto included in this annual report.

**Statements of Profits or Loss
(U.S. dollars, in thousands)**

	Year ended December 31,	
	2016	2017
Revenues	1,108,621	1,355,139
Cost of revenues	849,840	1,058,316
Gross profit	258,781	296,823
Research and development expenses, net	22,328	39,853
Selling, marketing, general and administrative expenses	147,953	184,164
Operating income	88,500	72,806
Financial expenses	(17,594)	(29,870)
Financial income	6,008	8,751
Pre-tax income before share of profits of companies accounted for at equity, net	76,914	51,687
Taxes on income	21,163	13,371
Share of profits of companies accounted for at equity, net	349	1,124
Net income	\$ 56,100	\$ 39,440
Attributable to:		
Equity holders of the Company	22,445	10,352
Non-controlling interests	33,655	29,088
	<u>\$ 56,100</u>	<u>\$ 39,440</u>

**Statement of Profits or Loss as a
Percentage of Revenues**

	Year ended December 31,	
	2016	2017
Revenues	100%	100%
Cost of revenues	77%	78%
Gross profit	23%	22%
Research and development expenses, net	2%	3%
Selling, marketing, general and administrative expenses	13%	14%
Operating income	8%	5%
Financial expenses	(2)%	(2)%
Financial income	1%	1%
Pre-tax income before share of profits of companies accounted for at equity, net	7%	4%
Taxes on income	2%	1%
Group's share of earnings of companies accounted for at equity, net	0%	0%
Net income	5%	3%
Attributable to:		
Equity holders of the Company	2%	1%
Non-controlling interests	3%	2%

Revenues. Revenues in 2017 increased by 22.2%, from \$1,108.6 million in 2016 to \$1,355.1 million in 2017. Revenues from the two categories of our operations were as follows: revenues from the delivery of software services increased by 21.4%, from \$835.4 million in 2016 to \$ 1,013.8 million in 2017, and revenues from the sale of our proprietary software products and related services increased by 24.9%, from \$ 273.2 million in 2016 to \$ 341.4 million in 2017.

The increase in software services revenues was recorded across the following of our investees reporting under this revenue stream— Matrix, and Magic Software—and was primarily due to growth in their revenues as described below, as offset in part by a decrease in revenues recorded by Insync, which also reports under this revenue stream:

Matrix:

Matrix's revenues increased from NIS 2,544.6 million (approximately \$662.6 million) in 2016 to NIS 2,857.1 million (approximately \$794.6 million) in 2017, reflecting an increase of 12.3% when measured in NIS, Matrix local currency (compared to 20.0% when measured in U.S dollars due to the devaluation of the U.S Dollar versus the NIS). The increase in Matrix's revenues was due to an increase in almost all of Matrix's principal areas of operations and due to the inclusion of Aviv Management Engineering (consolidated as of December 2016), and Network Infrastructure Technologies (consolidated as of October 2016) for the full year. The increase was primarily attributable to an increase of 13.8 % in Matrix's software solutions and services in its Israeli business line from NIS 1,546.3 million (approximately \$402.6 million) in 2016 to NIS 1,759.5 million (approximately \$ 489.3 million) in 2017, an increase of 14.8% in Matrix's computer infrastructure and integration solutions from NIS 418.5 million (approximately \$109.0 million) in 2016 to NIS 480.5 million (approximately \$ 133.6 million) in 2017 and an increase of 14.2% in Matrix's Software solutions and services in the United States from NIS 286.4 million (approximately \$74.6 million) in 2016 to NIS 327.0 million (approximately \$91.0 million) in 2017.

Magic Software:

Magic Software's revenues, reported under this revenue stream, increased by 35.9% from \$ 141.1 million to \$191.8 million, primarily attributable to (i) increased demand for the professional services offerings in Israel by Comblack IT Ltd, and in the U.S by all of our U.S subsidiaries' and (ii) the inclusion of Shavit Software (2009) Ltd. (consolidated as of November 2016), Twingo Ltd., (consolidated as of August 2016) and Quickcode Ltd., (consolidated as of February 2016) for the full year'.

InSync:

InSync's revenues decreased by 4.0% from \$34.3 million in 2016 to \$33.1 million.'

The increase in revenues from proprietary software products and related services was attributable in part to the inclusion for the first time of Michpal (consolidated as of January 2017) and to the following results involving Sapiens and Magic Software:

Sapiens:

Sapiens revenues increased from \$216.2 million in 2016 to \$269.2 million in 2017, reflecting an increase of 24.5%. The net increase in revenues of approximately \$53 million for the year ended December 31, 2017 was attributable to additional revenues from entities acquired by Sapiens, which contributed \$64.3 million towards that increase, primarily from StoneRiver, which Sapiens acquired in 2017. Sapiens' revenues reflected organic growth of approximately \$27.7 million in 2017 (excluding the impact of the specific factors described in the following sentence, which negatively impacted, and caused an overall decrease in our revenues from Sapiens existing customers), primarily due to implementation and professional services generated from Sapiens existing and new customers. Sapiens' revenues in 2017 were offset, in part, by decreases in Sapiens' revenues in amounts of \$26.5 million due to cancellation of a development project with a significant customer in 2017, and \$12.5 million attributable to the downsizing of Sapiens' non-insurance and financial services activities in Japan in 2017.

In October 2017, Sapiens signed an agreement with a 10% shareholder of Sapiens Japan Co., its 90%-owned Japanese subsidiary, under which such shareholder's independent company will separately provide all professional services requested by Sapiens' customers in Japan. As a result of this arrangement, Sapiens' revenues from non-insurance and financial professional services in Japan have begun to, and are expected to continue to, decrease significantly. In connection with this arrangement, Sapiens terminated all employment agreements of its Japanese subsidiary's employees (most of whom were then hired by the shareholder's new company). Despite the new arrangement, Sapiens will continue to provide maintenance services only to existing Japanese customers who had purchased licenses for its eMerge product.

Magic Software:

Magic Software's revenues, reported under this revenue stream, increased by 16.1% from \$57.1 million in 2016 to \$66.3 million in 2017. The increase in Magic Software revenues was attributable to (i) anticipated software renewal lifecycle among some of its AppBuilder's larger enterprise customers, (ii) increased demand for the Magic xpi Integration Platform, which grew by 51% compared to 2016 and (iii) the inclusion of Roshtov Software Industries Ltd (consolidated as of July 2016) in Magic Software's consolidated results for 2017. Those factors were offset in part by a decrease in Magic Software's revenues from its vertical packaged software solution Leap™ following a successful completion of a large project, and by a 6% decline in Magic xpa licenses sale.

A breakdown of our overall revenues into proprietary software products and related services and software services revenues for the years ended December 31, 2016 and 2017, the percentage those respective categories of revenues constituted out of our total revenues in those years, and the percentage change for each such category of revenues from 2016 to 2017, are provided in the below table:

Revenue category	Year ended December 31, 2016		Year-over Year change (\$ in thousands)	Year ended December 31, 2017	
	Revenues	Percentage		Revenues	Percentage
Proprietary software products and related services	273,235	24.65%	24.93%	341,350	25.19%
Software services	835,386	75.35%	21.36%	1,013,789	74.81%
Total	1,108,621	100%	22.24%	1,355,139	100%

Revenues by geographical region

The dollar amount of our revenues attributable to each of the geographical regions in which we conduct our operations for the years ended December 31, 2016 and 2017, respectively, were as follows:

	Year ended December 31,	
	2016	2017
	(\$ in thousands)	
Israel	\$ 663,341	\$ 846,298
International:		
United States	283,297	322,892
Europe	115,444	131,025
Africa	2,296	24,370
Japan	38,310	15,763
Other (mainly Asia pacific)	5,933	14,791
Total	\$ 1,108,621	\$ 1,355,139

Cost of Revenues Cost of revenues consists primarily of wages, personnel expenses, other personnel-related expenses of software consultants, subcontractors and engineers, royalties and licenses payable to third parties, amortization of capitalized software, and hardware and other materials costs. Cost of revenues increased by 24.5% from \$849.8 million in 2016 to \$1,058.3 million in 2017. As a percentage of total revenues, costs of revenues in 2016 and 2017 were 76.7% and 78.1%, respectively.

Our proprietary software solutions and related services sales are generally characterized by a higher gross margin than sales of our software services. The cost of revenues for proprietary software solutions and related services increased from \$ 149.2 million in 2016 to \$ 201.3 million in 2017. As a percentage of our proprietary software solutions and related services revenues, costs of revenues for proprietary software solutions and related services increased to 59.3% in 2017 compared to 54.6% in 2016.

The cost of revenues for software services increased from \$700.6 million in 2016 to \$ 857.0 million in 2017. As a percentage of software services revenues, costs of revenues for software services in 2016 and 2017 remained relatively stable at 84.4% in 2017 compared to 83.9% in 2016.

The increase in our cost of revenues was attributable in part to the inclusion for the first time of Michpal (consolidated as of January 2017) and to the following increases involving Matrix, Sapiens and Magic Software:

Matrix:

Matrix's cost of revenues increased by 20.9% from \$560.4 million in 2016 to \$677.7 million in 2017. The increase in absolute cost of revenues was related to the increase in Matrix's revenues during the year ended December 31, 2017 relative to the year ended December 31, 2016. The level of Matrix's cost of revenues as a percentage of its revenues has consistently increased slightly in recent years from 84% and 84.6% in 2015 and 2016, respectively, to 85.3% in 2017. The increase in Matrix's cost of revenues as a percentage of its revenues as recorded in U.S. dollars was primarily attributable to continual increases in employee salaries in Israel and in the U.S.

Sapiens:

Sapiens' cost of revenues increased by 35.0% from \$130.2 million in 2016 to \$175.8 million in 2017 (when measured in accordance with IFRS). Cost of revenues increased as a percentage of revenues during the year ended December 31, 2017, to 65.3% as compared to 60.2% during the year ended December 31, 2016. The increase in absolute cost of revenues of \$45.6 million was primarily attributable to an increase in cost of revenues of acquired companies totaling \$39.1 million. The increase of 5% in Sapiens' cost of revenues as a percentage of revenues was primarily due to the cancellation of a project development with a high degree of profitability in 2016 that did not continue in 2017, which caused an increase of 4.1% in Sapiens' cost of revenues as a percentage of its revenues, as well as from the appreciation of the New Israeli Shekel relative to the U.S. dollar, which resulted in an increase in cost of revenues as a percentage of revenues as recorded in U.S. dollars for the year ended December 31, 2017.

Magic Software:

Magic Software's cost of revenues increased by 31.3% from \$133.4 million in 2016 to \$175.2 million in 2017. The increase in cost of revenues was primarily attributable to: (i) the inclusion of Roshtov Software Industries Ltd. for the full year (consolidated as of July 2016) and an increase in amortization costs of Roshtov Software Industries Ltd.'s acquired software, Clicks; (ii) an increase in amortization of capitalized software development costs related to Magic xpa and Magic xpi application development and integration platforms, (iii) the inclusion of Shavit Software (2009) Ltd. (consolidated as of November 2016), Twingo Ltd., (consolidated as of August 2016) and Quickcode Ltd., (consolidated as of February 2016) for the full year. The remaining increase in Magic Software's cost of revenues was attributable to the increase in Magic Software's revenues from IT consulting services.

Cost of revenues for the years ended December 31, 2017 and 2016 include insignificant amounts of stock-based compensation.

Research and Development Costs, net. Research and development, or R&D, expenses consist primarily of wages and related expenses and, to a lesser degree, consulting fees that we pay to employees and independent contractors, respectively, engaged in research and development. Research and development expenses, net, consist of research and development expenses, gross, less capitalized software costs.

Research and development expenses, gross, increased from \$ 32.1 million in 2016 to \$ 49.4 million in 2017, mainly due to the R&D investments in our newly acquired entities (StoneRiver, Inc, KnowledgePrice.com, Roshtov Software Industries Ltd. and Michpal), which totaled \$14.0 million, as well as to increased investment in research and development activities in support of the expansion of our offering of solutions in the year ended December 31, 2017. In 2017, we capitalized software costs of \$9.6 million, compared to \$9.8 million in 2016. Capitalization of software costs in 2016 and 2017 was attributable to our subsidiaries engaged in providing proprietary software solutions (i.e., Magic Software and certain of its subsidiaries, Sapiens and certain of its subsidiaries and Michpal). Research and development expenses, net, increased from \$22.3 million in 2016 to \$ 39.9 million in 2017, mainly due to the factors described above.

As a percentage of revenues, research and development expenses, net, increased from 2.0% in 2016 to 2.9% in 2017. Research and development expenses for the years ended December 31, 2017 and 2016 include insignificant amounts of stock-based compensation.

Selling, Marketing General and Administrative Expenses. Selling, marketing, general and administrative, or SMG&A, expenses consist primarily of cost of salaries, severance and related expenses of sales, marketing, management and administrative employees, travel expenses, selling expenses, rent, utilities, communications expenses, expenses related to external consultants, depreciation, amortization and other expenses. Selling, marketing, general and administrative expenses increased from \$148.0 million in 2016 to \$184.2 million in 2017. As a percentage of revenues, SMG&A remained relatively stable at 13.6% in 2017 compared to 13.4% in 2016.

The increase in the cost of SMG&A was attributable in part to the inclusion for the first time of Michpal (consolidated as of January 2017), which accounted for \$1.5 million of SMG&A expenses, and to the following increases involving Matrix, Sapiens and Magic Software:

Matrix:

Matrix's SMG&A expenses increased to \$62.6 million for the year ended December 31, 2017 compared to \$53.4 million for the year ended December 31, 2016, representing an increase of \$9.2 million. This increase was mainly attributable to a capital gain of \$3.2 million recorded in 2016 following the sale of full rights to real property (which capital gain offset SMG&A expense in 2016) and the inclusion of the SMG&A expenses of Aviv Management Engineering (consolidated as of December 2016) and Network Infrastructure Technologies (consolidated as of October 2016) for the full year in 2017.

Sapiens:

Sapiens' SMG&A expenses increased to \$60.3 million for the year ended December 31, 2017 compared to \$44.7 million for the year ended December 31, 2016, representing an increase of \$15.6 million. This increase was mainly attributable to SMG&A expenses of Sapiens' newly acquired entities, which totaled \$9.2 million in 2017, as well as SMG&A expenses of \$8.1 million associated with Sapiens' cost reduction and reorganization program, which primarily relates to costs of employee terminations and reduction in leasing facilities globally, including the downsizing of Sapiens' non-insurance and financial services activities in Japan in 2017.

Magic Software:

Magic Software's SMG&A expenses increased to \$50.1 million for the year ended December 31, 2017 compared to \$41.3 million for the year ended December 31, 2016, representing an increase of \$8.8 million. This increase was mainly attributable to: (i) an increase of 15% in Magic Software's sales and marketing expenses from \$23.8 million in 2016 to \$27.2 million in 2017, mainly resulting from an increase in amortization expenses of acquired customer relationships recorded as a result of business combinations in 2017 amounting to \$6.5 million, compared to \$5.3 million in 2016; (ii) the sales and marketing expenses in an amount of \$1.4 million in 2017 of entities that were acquired during 2016 and which were consolidated for the entire year for the first time in 2017; (iii) an increase in Magic Software's sales and marketing investments in its software technology platforms amounting to \$0.8 million; (iv) an increase of 30% in Magic Software's general and administrative expenses from \$17.6 million in 2016 to \$22.8 million in 2017, primarily attributable to the general and administrative expenses of companies acquired during 2016 and consolidated for the entire year for the first time in 2017, which contributed \$1.9 million of general and administrative expenses; (v) an increase in headcount of Magic Software's general and administrative employees from 122 in 2016 to 139 in 2017; and (vi) an increase in provision for doubtful accounts from \$0.4 million recorded in 2016 to \$1.2 million recorded in 2017.

Selling, marketing general and administrative expenses for the years ended December 31, 2016 and 2017 included \$4.3 million and \$ 4.0 million, respectively, of stock-based compensation expenses.

Operating Income. Our operating income decreased from \$88.5 million in 2016 to \$72.8 million in 2017. As a percentage of revenues, our operating income decreased from 8.0% in 2016 to 5.4% in 2017. The decrease in our operating income during the year ended December 31, 2017 relative to the year ended December 31, 2016 as an absolute amount was attributable to the various gross profit and operating expenses trends described above.

Financial Expenses, net. Financial expenses increased from \$17.6 million in 2016 to \$29.9 million in 2017. Financial expenses, net increased from \$11.6 million in 2016 to \$21.2 million in 2017. Financial expenses are influenced by various factors, including: our cash balances; loan balances; outstanding debentures; changes in market value of trading marketable securities; changes in liabilities related to business combinations; changes in the exchange rate of the NIS against the dollar; changes in the exchange rate of the dollar against the Euro; and changes in the Israeli consumer price index, or CPI. The increase in net financial expenses in 2017 was primarily attributable to (i) increased financial expenses of \$6.5 million recorded during the year ended December 31, 2017 compared to \$0.9 million recorded during the year ended December 31, 2016 with respect to the revaluation of Formula's Series A Secured Debentures, which are linked to the NIS, due to the devaluation of the US dollar relative to the NIS; (ii) an increase in Magic Software's interest expenses on its debt to banks and financial institutions by an amount of \$1.6 million; (iii) an increase in Sapiens' financial expenses to \$3.1 million during the year ended December 31, 2017 compared to financial income of \$0.5 million during the year ended December 31, 2016, which was attributable to an aggregate of \$1.6 million of interest expenses in connection with (a) the long-term loan that Sapiens borrowed and repaid in its entirety six months later during 2017, as well as (b) interest on Sapiens' newly-issued debentures in 2017.

Equity in gains of affiliated companies net. Our equity in gains of affiliated companies, net, increased from \$349,000 in 2016 to \$1.1 million in 2017. Our equity in gains of affiliates in 2017 was attributable to TSG.

Taxes on Income. Taxes on income decreased from \$21.2 million in 2016 to \$13.4 million in 2017. The decrease in our expense from taxes on income was primarily attributable to Sapiens' shift from tax expenses on income of \$5.8 million recorded during the year ended December 31, 2016 to a tax benefit of \$2.6 million during the year ended December 31, 2017. Sapiens' shift to a tax benefit in 2017 compared to tax expense in the previous year was mainly attributable to the one-time effect of \$3.8 million of tax benefit resulting from the remeasurement of Sapiens' deferred tax liability in respect of its US subsidiaries, due to a decrease in the federal corporate income tax rate following the enactment of the U.S. Tax Act in the United States in December 2017, as well as an increase in deferred tax assets recorded in 2017 in respect of the one-time cost reduction and reorganization program that Sapiens believe will more likely than not be utilized in the near future.

Net income attributable to non-controlling interests. Net income attributable to non-controlling interests includes the non-controlling interests held by other shareholders in our consolidated companies which are not wholly owned by Formula during each of the periods indicated. Net income attributable to non-controlling interests decreased from \$33.7 million in 2016 to \$29.1 million in 2017, mainly due to the decrease in Sapiens' net income attributable to its shareholders from \$16.7 million during the year ended December 31, 2016 to a net loss attributable to its shareholders of \$2.4 million recorded during the year ended December 31, 2017.

Impact of Inflation and Currency Fluctuations on Results of Operations

Our financial statements are stated in U.S. dollars, our functional currency. However, most of our revenues and expenses from our software services revenue line are denominated in NIS and a substantial portion of our revenues and costs from our proprietary software products and related services revenue line are incurred in other currencies, particularly NIS, Euros, Japanese yen, Indian rupee and the British pound. We also maintain substantial non-U.S. dollar balances of assets, including cash, accounts receivable, and liabilities, including accounts payable, debentures and debt to financial institutions. Therefore, fluctuations in the value of the currencies in which we do business relative to the U.S. dollar may adversely affect our business, results of operations and financial condition. For financial reporting purposes, we translate all non-U.S. dollar denominated transactions into dollars using the average exchange rate over the period during which the transactions occur, in accordance with IFRS. Therefore, we are exposed to the risk that the devaluation of the NIS relative to the U.S. dollar may reduce the revenue growth rate and profitability for our software services in dollar terms. The average of the daily representative exchange rates of the NIS to the dollar in 2017 and 2018, as reported by the Bank of Israel, was NIS 3.5998 per US\$1 and NIS 3.5949 per US\$1, respectively. Consequently, this trend slightly increased the dollar value of our NIS-based revenues and profitability for our Israeli software services in 2018 relative to 2017. On the other hand, a significant portion of our revenues from proprietary software products and related services is currently mainly denominated in U.S. dollars, Euros, Japanese yen, Indian rupee and the British pound, whereas a substantial portion of our expenses relating to those products, principally salaries and related personnel expenses, are denominated in NIS. As a result, the devaluation of the Euro, Japanese yen, Indian rupee and the British pound relative to the U.S. dollar (in which our financial results are reported) reduces the revenue growth rate and profitability for our proprietary software products and related services in dollar terms, thereby adversely affecting our operating results. From the perspective of expenses (and contrary to the trend involving software services), the devaluation of the NIS relative to the dollar, decreases the relative value, in U.S. dollars, of the NIS-denominated operating costs related to our proprietary software product revenues. That, therefore, increases our profitability and partially compensates for the negative effect that this movement has on our revenues and our profitability from our software services.

Since most of our expenses are incurred in NIS, the dollar cost of our operations also rises as a result of any increase in the rate of inflation in Israel, to the extent that such inflation is not offset, or is only offset on a lagging basis, by the devaluation (if any) of the NIS against the dollar during a relevant period of time. The average Israeli rate of inflation on an annual basis amounted to (-0.2%), 0.4% and 0.8% for the years ended December 31, 2016, 2017 and 2018, respectively. In 2016 and 2017, the NIS appreciated relative to the U.S. dollar, whereas in 2018 the NIS devaluated against the dollar (in each case, based on average of the daily representative exchange rates). Therefore, in 2016, the negative inflation rate offset the increase in the dollar cost of our operations due to the appreciation of the NIS relative to the dollar. In 2017, inflation and the appreciation of the NIS relative to the dollar combined to increase the cost of our operations. In 2018, the depreciation of the NIS relative to the dollar reduced the dollar cost of our operations, despite the increase that would have otherwise been caused by the rise in inflation in Israel.

An increase in the rate of inflation in Israel may also have a material adverse effect on our financial results by increasing our operational expenses, as certain of our operating lease and rent agreements are denominated in NIS and are generally linked to the Israeli CPI, so to the extent that the Israeli CPI rises, so will our operational expenses.

Though, to date, we have not engaged in significant currency hedging transactions, we do periodically engage in certain economic hedging in order to help protect against fluctuation in foreign currency exchange rates. Instruments that we use to manage currency exchange risks may include foreign currency forward contracts. The purpose of our foreign currency hedging activities is to reduce our exposure, from the perspective of our profitability, to the risks that arise from the adverse impact that exchange rates bear on our revenues and expenses that are denominated in non-U.S. currencies. Instruments are used selectively to manage risks, but there can be no assurance that we will be fully protected against material foreign currency fluctuations. We do not use these instruments for speculative or trading purposes. In the future, we may enter into more or larger currency hedging transactions to decrease the risk of financial exposure from fluctuations in the exchange rate of the NIS, Euro, Japanese yen or British pound against the dollar, and from increases in the Israeli inflation rate. However, we cannot assure you that these measures will adequately protect us from the adverse effects of those fluctuations.

Following is a summary of the most relevant monetary indicators for the reported periods:

For the year ended December 31,	Inflation rate in Israel	Devaluation (appreciation) of NIS against the US\$*	Devaluation (appreciation) of Euro against the US\$*
	%	%	%
2016	(-0.2)	(1.5)	3.5
2017	0.4	(9.8)	(12.2)
2018	0.8	8.1	4.6

* Reflects the change in the daily exchange rate from the start of such year until the end of such year rather than the change in the average daily exchange rate over the course of that year relative to the previous year.

Effective Corporate Tax Rates in Israel

Tax regulations have a material impact on our business, particularly in Israel where we have the headquarters or certain of our subsidiaries and affiliate. The following summary describes the current tax structure applicable to companies in Israel, with special reference to its effect on us. The following also contains a discussion of government programs from which we, and some of our subsidiaries, benefit. To the extent that the discussion is based on tax legislation that has not been subject to judicial or administrative interpretation, there can be no assurance that the views expressed in the discussion will be accepted by the tax authorities in question.

Corporate Tax

Israeli resident companies are generally subject to corporate tax on their taxable income. As of 2018, the corporate tax rate is 23% (in 2017 the corporate tax rate was 24%). However, the effective tax rate payable by a company that derives income from an AE, a BE or PFE, as further discussed below, may be considerably less. In addition, Israeli companies are generally subject to tax at the prevailing regular corporate tax rate on their capital gains.

Besides being subject to the general corporate tax rules in Israel, certain of our Israeli subsidiaries have also, from time to time, applied for and received certain grants and tax benefits from, and participate in, programs sponsored by the Government of Israel, as described below.

Taxation of Non-Israeli Subsidiaries Held by an Israeli Parent Company

Non-Israeli subsidiaries of an Israeli parent company are generally subject to tax in their countries of residence under tax laws applicable to them in such countries. Such subsidiaries could also be subject to Israeli corporate tax on their income if they were to be managed and controlled from Israel. In such case, double taxation could ensue unless an applicable tax treaty provides applicable rules for relief from double taxation or such relief is available under internal law.

An Israeli parent company may also be required to include in its income on a current basis, as a deemed dividend, certain income derived by its subsidiaries under the Israeli Controlled Foreign Corporation rules, or CFC, regardless of whether such income is distributed or not. Under these rules, a non-Israeli subsidiary is considered to be a CFC, if, among other things, (i) a majority of the subsidiary's means of control are held by Israeli residents, (ii) most of its revenues or income is passive (such as interest, dividends, royalties, rental income or income from capital gains) and (iii) such income is taxed at a rate that does not exceed 15%. An Israeli parent company that is subject to Israeli taxes on such deemed dividend income, may generally receive a credit for foreign taxes paid by its subsidiaries in their country of residence and for deemed foreign taxes to be withheld upon the actual distribution of such income.

Law for the Encouragement of Industry (Taxes), 5729-1969

The Law for the Encouragement of Industry (Taxes), 5729-1969 (the "Industry Encouragement Law") provides several tax benefits for an "Industrial Company." Pursuant to the Industry Encouragement Law, a company qualifies as an Industrial Company if it is an Israeli resident company which was incorporated in Israel and at least 90% of its income in any tax year (other than income from certain government loans) is generated from an "Industrial Enterprise" that it owns and is located in Israel. An "Industrial Enterprise" is defined as an enterprise whose major activity, in a given tax year, is industrial production.

An Industrial Company is entitled to certain tax benefits, including:

- deduction of the cost of the purchases of patents, or the right to use a patent or know-how used for the development or promotion of the Industrial Enterprise, over an eight-year period commencing on the year in which such rights were first exercised;
- the right to elect, under certain conditions, to file a consolidated tax return together with Israeli Industrial Companies controlled by it; and
- deduction of expenses related to a public offering in equal amounts over three years.

Eligibility for benefits under the Industry Encouragement Law is not subject to receipt of prior approval from any governmental authority.

We believe that certain of our Israeli subsidiaries and affiliate currently qualify as Industrial Companies within the definition under the Industry Encouragement Law. We cannot assure you that they will continue to qualify as Industrial Companies or that the benefits described above will be available in the future.

Tax Benefits under the Law for the Encouragement of Capital Investments, 5719-1959

The Law for the Encouragement of Capital Investments, 5719-1959 (the "Investment Law"), provides certain incentives for capital investments in a production facility (or other eligible assets) by "Industrial Enterprises" (as defined under the Investment Law). Generally, an investment program that is implemented in accordance with the provisions of the Investment Law, referred to as an Approved Enterprise, or AE, a Beneficiary Enterprise, or BE, a Preferred Enterprise, or PFE, and Preferred Technology Enterprise or TE, is entitled to benefits as discussed below. These benefits may include cash grants from the Israeli government and tax benefits, based upon, among other things, the geographic location in Israel of the facility in which the investment is made or the election of the grantee. In order to qualify for these incentives, an AE, a BE, a PFE or a TE is required to comply with the requirements of the Investment Law.

The Investment Law has been amended several times over the last years, with the three most significant changes effective as of April 1, 2005 (referred to as the "2005 Amendment"), as of January 1, 2011 (the "2011 Amendment") and as of January 1, 2017 (the "2017 Amendment"). Pursuant to the 2005 Amendment, tax benefits granted in accordance with the provisions of the Investment Law prior to its revision by the 2005 Amendment remain in force but any benefits granted subsequently are subject to the provisions of the 2005 Amendment. Similarly, the 2011 Amendment introduced new benefits instead of the benefits granted in accordance with the provisions of the Investment Law in effect prior to the 2011 Amendment. However, companies entitled to benefits under the Investment Law as in effect prior to January 1, 2011 were entitled to choose to continue to enjoy such benefits, provided that certain conditions are met, or elect instead irrevocably to forego such benefits and elect the benefits of the 2011 Amendment. The 2017 Amendment introduces new benefits for Technological Enterprises, alongside the existing tax benefits.

Tax Benefits for Income from AEs Approved Before April 1, 2005

Under the Investment Law prior to the 2005 Amendment, a company that wished to receive benefits on its investment program that is implemented in accordance with the provisions of the Investment Law (referred to as an AE), had to receive an approval from the Israeli Authority for Investments and Development of the Industry and Economy (referred to as the Investment Center). Each certificate of approval for an AE relates to a specific investment program delineated both by the financial scope of the investment, including sources of funds, and by the physical characteristics of the facility or other assets—e.g., the equipment to be purchased and utilized pursuant to the program.

An AE may elect to forego any entitlement to the cash grants otherwise available under the Investment Law and, instead, participate in an alternative benefits program. Under the alternative benefits program, a company's undistributed income derived from an AE will be exempt from corporate tax for a period of between two (2) and ten (10) years from the first year of taxable income, depending on the geographic location within Israel of the AE, and a reduced corporate tax rate of between 10% to 25% for the remainder of the benefits period, depending on the level of foreign investment in the company in each year, as detailed below. The benefits period under AE status is limited to 12 years from the year in which the production commenced (as determined by the Investment Center), or 14 years from the year of receipt of the approval as an AE, whichever ends earlier. If a company has more than one AE program or if only a portion of its capital investments are approved, its effective tax rate is the result of a weighted combination of the applicable rates. The tax benefits available under any certificate of approval relate only to taxable income attributable to the specific program and are contingent upon meeting the criteria set out in the certificate of approval. Income derived from activity that is not integral to the activity of the AE will not enjoy tax benefits.

A company that has an AE program is eligible for further tax benefits, if it qualifies as a Foreign Investors' Company, or FIC. An FIC eligible for benefits is essentially a company with a level of foreign investment, as defined in the Investment Law, of more than 25%. The level of foreign investment is measured as the percentage of rights in the company (in terms of shares, rights to profits, voting and appointment of directors), and of combined share and loan capital, that are owned, directly or indirectly, by persons who are not residents of Israel. The determination as to whether or not a company qualifies as an FIC is made on an annual basis. An FIC that has an AE program will be eligible for an extension of the period during which it is entitled to tax benefits under its AE status (so that the benefits period may be up to ten years) and for further tax benefits if the level of foreign investment is 49% or more. If a company that has an AE program is a wholly owned subsidiary of another company, then the percentage of foreign investment is determined based on the percentage of foreign investment in the parent company.

The corporate tax rates and related levels of foreign investments with respect to an FIC that has an AE program are set forth in the following table:

<u>Percentage of non-Israeli ownership</u>	<u>Corporate Tax Rate</u>
Over 25% but less than 49%	Up to 25%
49% or more but less than 74%	20%
74% or more but less than 90%	15%
90% or more	10%

A company that has elected to participate in the alternative benefits program and that subsequently pays a dividend out of the income derived from the portion of its facilities that have been granted AE status during the tax exemption period will be subject to corporate tax in respect of the amount of dividend distributed (grossed up to reflect such pre-tax income that it would have had to earn in order to distribute the dividend) at the corporate tax rate that would have been otherwise applicable if such income had not been tax-exempted under the alternative benefits program. This rate generally ranges from 10% to 25%, depending on the level of foreign investment in the company in each year, as explained above.

In addition, dividends paid out of income attributed to an AE (or out of dividends received from a company whose income is attributed to an AE) are generally subject to withholding tax at source at the rate of 15%, or at a lower rate as may be provided under an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). The 15% tax rate is limited to dividends and distributions out of income derived during the benefits period and actually paid at any time up to 12 years thereafter. After this period, the withholding tax is applied at a rate of up to 30%, or at a lower rate under an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). In the case of an FIC, the 12-year limitation on reduced withholding tax on dividends does not apply.

The Investment Law also provides that an AE is entitled to accelerated depreciation on its property and equipment that are included in an AE program during the first five years in which the equipment is used. This benefit is an incentive granted by the Israeli government regardless of whether the alternative benefits program is elected.

The benefits available to an AE are subject to the continued fulfillment of conditions stipulated in the Investment Law and its regulations and the criteria in the specific certificate of approval with respect thereto, as described above. If a company does not meet these conditions, it would be required to refund the amount of tax benefits, adjusted to the Israeli consumer price index and interest or other monetary penalty.

Under the terms of the AE program, income that is attributable to one of Sapiens' Israeli subsidiaries has been exempted from income tax for a period of two years commencing in 2014.

Tax benefits under the 2005 Amendment that became effective on April 1, 2005.

The 2005 Amendment applies to new investment programs commencing after 2004, and does not apply to investment programs approved prior to April 1, 2005. The 2005 Amendment provides that terms and benefits included in any certificate of approval that was granted before the 2005 Amendment became effective (April 1, 2005) will remain subject to the provisions of the Investment Law as in effect on the date of such approval. Pursuant to the 2005 Amendment, the Investment Center will continue to grant AE status to qualifying investments. The 2005 Amendment, however, limits the scope of enterprises that may be approved by the Investment Center by setting criteria for the approval of a facility as an AE.

An enterprise that qualifies under the new provisions is referred to as a Beneficiary Enterprise, rather than AE. The 2005 Amendment provides that a certificate of approval from the Investment Center is required only for AEs that receive cash grants. As a result, a company is no longer required to obtain the advance approval of the Investment Center in order to receive the tax benefits previously available under the alternative benefits program. Rather, a company may claim the tax benefits offered by the Investment Law directly in its tax returns, provided that its facilities meet the criteria for tax benefits set forth in the 2005 Amendment. A company that has a Beneficiary Enterprise may, at its discretion, approach the Israel Tax Authority for a pre-ruling confirming that it is in compliance with the provisions of the Investment Law.

Tax benefits are available under the 2005 Amendment to production facilities (or other eligible facilities), which are generally required to derive more than 25% of their business income from export to specific markets with a population of at least 14 million in 2012 (such export criteria will further be increased in the future by 1.4% per annum). In order to receive the tax benefits, the 2005 Amendment states that a company must make an investment which meets certain conditions set forth in the amendment for tax benefits and which exceeds a minimum investment amount specified in the Investment Law. Such investment entitles a company to receive a Beneficiary Enterprise status with respect to the investment, and may be made over a period of no more than three years ending in the year in which the company chose to have the tax benefits apply to its Beneficiary Enterprise. Where a company requests to have the tax benefits apply to an expansion of existing facilities, only the expansion will be considered to be a Beneficiary Enterprise, and the company's effective tax rate will be the weighted average of the applicable rates. In such case, the minimum investment required in order to qualify as a Beneficiary Enterprise must exceed a certain percentage of the value of the company's production assets before the expansion.

The extent of the tax benefits available under the 2005 Amendment to qualifying income of a Beneficiary Enterprise depends on, among other things, the geographic location in Israel of the Beneficiary Enterprise. The location will also determine the period for which tax benefits are available. Such tax benefits include an exemption from corporate tax on undistributed income generated by the Beneficiary Enterprise for a period of between two to ten years, depending on the geographic location of the Beneficiary Enterprise in Israel, and a reduced corporate tax rate of between 10% to 25% for the remainder of the benefits period, depending on the level of foreign investment in the company in each year, as explained above. The benefits period is limited to 12 or 14 years from the year the company first chose to have the tax benefits apply, depending on the location of the company within Israel.

A company qualifying for tax benefits under the 2005 Amendment which pays a dividend out of income derived by its BE during the tax exemption period will be subject to corporate tax in respect of the amount of the dividend distributed (grossed-up to reflect the pre-tax income that it would have had to earn in order to distribute the dividend) at the corporate tax rate which would have otherwise been applicable. Dividends paid out of income attributed to a BE (or out of dividends received from a company whose income is attributed to a BE) are generally subject to withholding tax at source at the rate of 15% or at a lower rate as may be provided in an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). The reduced rate of 15% is limited to dividends and distributions out of income attributed to a Beneficiary Enterprise during the benefits period and actually paid at any time up to 12 years thereafter except with respect to an FIC, in which case the 12-year limit does not apply.

The benefits available to a BE are subject to the continued fulfillment of conditions stipulated in the Investment Law and its regulations. If a company does not meet these conditions, it would be required to refund the amount of tax benefits, as adjusted by the Israeli consumer price index and interest, or other monetary penalties.

Tax benefits under the 2011 Amendment that became effective on January 1, 2011.

The 2011 Amendment canceled the availability of the benefits granted to companies in accordance with the provisions of the Investment Law prior to 2011 and, instead, introduced new benefits for income generated by a "Preferred Company" through its PFE (as such terms are defined in the Investment Law) as of January 1, 2011. A Preferred Company is defined as either (i) a company incorporated in Israel which is not wholly owned by a governmental entity or (ii) a limited partnership that (a) was registered under the Israeli Partnerships Ordinance and (b) all of its limited partners are companies incorporated in Israel, but not all of them are governmental entities; which has, among other things, PFE status and is controlled and managed from Israel. Pursuant to the 2011 Amendment, a Preferred Company was entitled to a reduced corporate tax rate of 15% with respect to its preferred income, or PFI, attributed to its PFE in 2011 and 2012, unless the PFE was located in a certain development zone, in which case the rate was 10%. Such corporate tax rates were reduced to 12.5% and 7%, respectively, in 2013 and were increased to 16% and 9%, respectively, in 2014 until 2016. Pursuant to the 2017 Amendment, in 2017 and thereafter, the corporate tax rate for a PFE that is located in a specified development zone was decreased to 7.5%, while the reduced corporate tax rate for other development zones remains 16%. Income derived by a Preferred Company from a 'Special PFE' (as such term is defined in the Investment Law) would be entitled, during a benefits period of 10 years, to further reduced tax rates of 8%, or 5% if the Special PFE is located in a certain development zone. As of January 1, 2017, the definition for 'Special PFE' includes less stringent conditions.

The classification of income generated from the provision of usage rights in know-how or software that were developed in a PFE, as well as royalty income received with respect to such usage, is subject, as PFE income, to the issuance of a pre-ruling from the Israel Tax Authority that stipulates that such income is associated with the productive activity of the PFE in Israel.

Dividends paid out of PFI attributed to a PFE or to a Special PFE are generally subject to withholding tax at source at the rate of 20% or such lower rate as may be provided in an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). However, if such dividends are paid to an Israeli company, no tax is required to be withheld (although, if such dividends are subsequently distributed to individuals or a non-Israeli company, withholding tax at a rate of 20% or such lower rate as may be provided in an applicable tax treaty will apply). From 2017 to 2019, dividends paid out of PFI attributed to a PFE, directly to a foreign parent company, are subject to withholding tax at source at the rate of 5% (temporary provisions).

The 2011 Amendment also provided transitional provisions to address companies already enjoying existing tax benefits under the Investment Law. These transitional provisions provide, among other things, that unless an irrevocable request is made to apply the provisions of the Investment Law as amended in 2011 with respect to income to be derived as of January 1, 2011: (i) the terms and benefits included in any certificate of approval that was granted to an AE, which chose to receive grants, before the 2011 Amendment became effective, will remain subject to the provisions of the Investment Law as in effect on the date of such approval, and subject to certain conditions; (ii) the terms and benefits included in any certificate of approval that was granted to an AE, that had participated in an alternative benefits program, before the 2011 Amendment became effective, will remain subject to the provisions of the Investment Law as in effect on the date of such approval, provided that certain conditions are met; and (iii) a Beneficiary Enterprise can elect to continue to benefit from the benefits provided to it before the 2011 Amendment came into effect, provided that certain conditions are met.

In 2011, Magic and one of its Israeli subsidiaries filed a notice to the Israeli tax authorities to apply for the new benefits under the 2011 Amendment, and therefore were subject to the amended tax rate of 16% for the tax years 2011-2016.

In 2015, certain of Sapiens' Israeli subsidiaries filed a notice to the Israeli tax authorities to apply for the new benefits under the 2011 Amendment, and therefore were subject to the amended tax rate of 16% for the tax years 2014-2016.

New Tax benefits under the 2017 Amendment that became effective on January 1, 2017

The 2017 Amendment was enacted as part of the Economic Efficiency Law that was published on December 29, 2016, and is effective as of January 1, 2017. The 2017 Amendment provides new tax benefits for two types of "Technology Enterprises", as described below, and is in addition to the other existing tax beneficial programs under the Investment Law.

The 2017 Amendment provides that a technology company satisfying certain conditions will qualify as a "Preferred Technology Enterprise", or PTE, and will thereby enjoy a reduced corporate tax rate of 12% on income that qualifies as "Preferred Technology Income", or PTI, as defined in the Investment Law. The tax rate is further reduced to 7.5% for a PTE located in development zone A. In addition, a Preferred Technology Company will enjoy a reduced corporate tax rate of 12% on capital gain derived from the sale of certain Benefited Intangible Assets (as defined in the Investment Law) to a related foreign company if the Benefited Intangible Assets were acquired from a foreign company on or after January 1, 2017 for at least NIS 200 million, and the sale receives prior approval from the National Authority for Technological Innovation (previously known as the Israeli Office of the Chief Scientist) (referred to as the IIA).

The 2017 Amendment further provides that a technology company satisfying certain conditions will qualify as a Special PTE (an enterprise for which, among others, total consolidated revenues of its parent company and all subsidiaries exceed NIS 10 billion) and will thereby benefit from a reduced corporate tax rate of 6% on PTI regardless of the company's geographic location within Israel. In addition, a Special PTE will benefit from a reduced corporate tax rate of 6% on capital gain derived from the sale of certain "Benefited Intangible Assets" to a related foreign company if the Benefited Intangible Assets were either developed by the Special Preferred Technology Enterprise or acquired from a foreign company on or after January 1, 2017, and the sale received prior approval from the IIA. A Special PTE that acquires Benefited Intangible Assets from a foreign company for more than NIS 500 million will be eligible for these benefits for at least ten years, subject to certain approvals as specified in the Investment Law.

Dividends distributed by a PTE or a Special PTE, paid out of PTI, are generally subject to withholding tax at source at the rate of 20%, or such lower rate as may be provided in an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). However, if such dividends are paid to an Israeli company, no tax is required to be withheld. If such dividends are distributed to a foreign parent company holding at least 90% of the shares of the distributing company and other conditions are met, the withholding tax rate will be 4% (or a lower rate under a tax treaty, if applicable, subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate).

We examined the impact of the 2017 Amendment and the degree to which we will qualify as a PTE or Special PTE, and the amount of PTI that we may have, or other benefits that we may receive, from the 2017 Amendment. Beginning in 2017, part of the Group's taxable income in Israel is entitled to a preferred 12% tax rate under the 2017 Amendment.

Tax Benefits for Research and Development

Israeli tax law allows, under certain conditions, a tax deduction for research and development expenditures, including capital expenditures, for the year in which they are incurred. Such expenditures must relate to scientific research and development projects, and must be approved by the relevant Israeli government ministry, determined by the field of research. Furthermore, the research and development must be for the promotion of the company's business and carried out by or on behalf of the company seeking such tax deduction. However, the amount of such deductible expenses is reduced by the sum of any funds received through government grants for the finance of such scientific research and development projects. Expenditures not so approved by the relevant Israeli government ministry, but otherwise qualifying for deduction, are deductible over a three-year period.

B. Liquidity and Capital Resources

Since inception, we have financed our growth and business primarily through cash provided by operations and through public debt and equity offerings, as well as through private and public debt and equity offerings of our subsidiaries. In addition, we finance our business operations through short-term and long-term loans and borrowings available under our credit facilities.

Current Outlook

We had cash and cash equivalents and short-term investments (including marketable securities) of \$260.8 million and \$295.6 million at December 31, 2017 and December 31, 2018, respectively. At December 31, 2017 and December 31, 2018, we had indebtedness to banks and others of \$345.0 million and \$381.4 million, respectively, of which \$75.6 million and \$127.0 million were current liabilities and \$269.4 million and \$254.4 million were long-term liabilities as of those respective dates. In addition, as of December 31, 2018, Formula had indebtedness of \$24.2 million outstanding to an Israeli institutional investor and \$90.9 million, in the aggregate, outstanding under Formula's secured debentures (Series A) and convertible debentures (Series B) which Formula sold in a public offering in Israel in September 2015, as described below. In March 2019, Formula incurred an additional NIS 298.5 million (approximately \$82.1 million) of indebtedness pursuant to its issuance and sale of additional secured debentures (Series C) in a public offering in Israel.

We had cash and cash equivalents that were held outside of Israel and that would have been subject to income taxes if distributed as a dividend as of December 31, 2017 and 2018 in amounts of \$48.6 million and \$52.9 million, respectively.

Sources of Financing

Institutional Investor Loan

In January 2014, Formula received a NIS 200 million loan (approximately \$57.6 million) from a leading Israeli institutional investor. The loan is secured by certain of the shares of each of our publicly held subsidiary and affiliated companies. The loan's average duration from inception is approximately four years (paid over a period of six years, with the first payment made in January 2016) and carries a fixed annual interest rate of 5.5%.

Under the terms of the loan with the Israeli institutional investor, Formula has undertaken to maintain the following financial covenants, as they will be expressed in its financial statements:

1. Formula's equity shall not be lower than \$160 million at all times.
2. The ratio of Formula's equity to total assets will not be less than 20%.
3. The ratio of Formula's total financial debts less cash, short-term deposits and short-term marketable securities to the annual EBITDA will not exceed 3.5 to 1.
4. The ratio of Formula's total financial debts less cash, short-term deposits and short-term marketable securities to the total assets will not exceed 30%.
5. Formula's liabilities to banks and other financial institutions in its stand-alone balance sheet shall not be higher than NIS 700 million (approximately \$186.8 million).
6. Formula will not create any pledge on all or part of its property and assets in favor of any third party and will not provide any guarantee to secure any third party's debts as they are today and as they will be without the financial institution's consent.
7. Formula will not sell and/or transfer all or part of its assets to others in any manner whatsoever without the financial institution's advance written consent, unless it is done in the ordinary course of business.

Israeli Debenture Offerings

September 2015 Public Offering

In September 2015, Formula consummated a public offering of debentures in Israel. The two series of debentures issued by Formula in the public offering consisted of one series of debentures— the Series A Secured Debentures— that is secured by liens on the shares of Formula's subsidiaries (Matrix, Sapiens and Magic Software), and a second series— the Series B Convertible Debentures— that was convertible into ordinary shares of Formula. Both series of debentures were listed for trading only on the TASE.

In the public offering, Formula issued and sold a total amount of NIS 227,260,000 (\$58.2 million) par value of the debentures, which were subdivided into the following respective amounts of Series A Secured Debentures and Series B Convertible Debentures that were subject to the following terms:

- NIS 102,260,000 (\$26.3 million) par value of Series A Secured Debentures were sold, which bear interest on the unpaid principal at a fixed annual rate equal to 2.8% (which may vary based on the credit rating of the debentures), which is paid on a semi-annual basis through July 2024. The principal is payable in eight equal annual installments beginning in July 2017 and ending in July 2024. The interest rate varies based on the credit rating of the Series A Secured Debentures. The net proceeds received by Formula from the issuance of the Series A Secured Debentures in September 2015 amounted to \$25.9 million (net of issuance expenses).
- NIS 125,000,000 (\$31.9 million) par value of Series B Convertible Debentures were sold at a price per debenture unit (each unit comprised of NIS 1,000 par value of debentures) of NIS 1,020. The Series B Convertible Debentures bore interest at a fixed annual rate equal to 2.74% (which was subject to adjustment based on the credit rating of the debentures). Interest was payable in one payment upon maturity of the Series B Convertible Debentures on March 26, 2019 (at which time the accrued interest constituted 10% of the principal amount of the debentures, in the aggregate). The Series B Convertible Debentures were convertible into Formula's ordinary shares at a rate of NIS 157 (\$40.03) par value of Series B Convertible Debentures per one share. The conversion rate was subject to adjustment for the issuance of bonus shares, rights and dividends. The principal amount of and interest on the Series B Convertible Debentures was subject to adjustment based on changes in the exchange rate between the NIS and the U.S. dollar relative to the exchange rate on September 8, 2015. The net proceeds received by Formula from the issuance of Series B Convertible Debentures amounted to \$32.1 million (net of issuance expenses).

The gross proceeds received by Formula from the issuance of all debentures in September 2015 were approximately NIS 229.8 million (\$58.6 million), in the aggregate.

As a result of conversions that were effected during 2018 and 2019, prior to the maturity of the Series B Convertible Debentures in March 2019, holders of Series B Convertible Debentures converted an aggregate principal (par value) amount of NIS 80.5 million (of which NIS 231,700,000 were converted in 2018) into 545,485 ordinary shares, (of which 1,556 ordinary shares were issued in 2018), constituting 3.57% of Formula's issued and outstanding share capital (following those conversions). The remaining outstanding Series B Convertible Debentures matured on March 26, 2019, and the remaining outstanding principal of NIS 44.5 million (\$11.4 million) and interest on those debentures of \$1.1 million were paid on that date. No Series B Convertible Debentures are outstanding as of the date of this annual report.

January 2018 Private Placement

On January 31, 2018, Formula consummated a private placement to qualified investors in Israel, of an additional, aggregate NIS 150 million par value of Series A Secured Debentures at a price of NIS 1,034.7 for each NIS 1,000 principal amount. The aggregate gross proceeds totaled NIS 155.2 million (approximately \$45.6 million), excluding issuance costs of \$0.2 million. As a result of the private placement, the total outstanding principal amount of the Series A Secured Debentures increased to approximately NIS 239.5 million (approximately \$69.1 million) as of that time. The terms of the Series A Secured Debentures sold in the private placement are identical in all respects to those of the Series A Secured Debentures sold in Formula's September 2015 public offering.

March 2019 Public Offering

On March 31, 2019, Formula consummated a public offering in Israel of a new series of secured debentures—Series C Secured Debentures—in an aggregate NIS 300 million par value amount, at a price of NIS 1,000 for each unit of NIS 1,000 principal amount. The aggregate gross proceeds from the public offering totaled NIS 298.5 million (approximately \$82.2 million). The Series C Secured Debentures are secured by liens on the shares of Formula's subsidiaries, and are listed for trading only on the TASE. Each Series C Debenture unit bears interest at a fixed annual rate equal to 2.29%, which interest will be paid out on a semi-annual basis. The principal amount of the Series C Debentures will be payable by Formula in seven annual installments from December 1, 2020 through December 1, 2026, the first five of which will each constitute 11% of the principal, and the final two of which will each constitute 22.5% of the principal.

As a result of the public offering and following the retirement of the remaining Series B Convertible Debentures, the total principal amount of all debentures—including Series A Secured Debentures and Series C Secured Debentures—issued by Formula that remain outstanding as of March 31, 2019 constituted NIS 505.3 million (approximately \$139.1 million). The terms of the Series C Secured Debentures sold in the March 2019 public offering are substantially similar to those of the Series A Secured Debentures sold in Formula's September 2015 public offering and January 2018 private placement.

General Terms of Outstanding Debentures

The Series A Secured Debentures and Series C Secured Debentures contain, in addition to standard terms and obligations, the following obligations on our part:

- a negative pledge, subject to certain exceptions;
- a covenant not to distribute dividends unless: (i) shareholders' equity (not including minority interests) is at least \$290 million (for the Series C Secured Debentures) or \$250 million (for the Series A Secured Debentures); (ii) Formula's consolidated net financial indebtedness (financial indebtedness net of cash, marketable securities, deposits and other liquid financial instruments) does not exceed 50% (for the Series C Secured Debentures) or 65% (for the Series A Secured Debentures) of net CAP (which is defined as financial indebtedness, net, plus shareholders equity); (iii) the amount of the distributions (including, in the case of the Series C Secured Debentures, any previous distribution starting from January 1, 2016) does not exceed that aggregated amount of the profit accrued for 2015 and 75% of profits accrued from January 1, 2016 until the distribution; (iv) no event of default shall have occurred; and (v) no material breach of obligations under the debentures shall have occurred; and
- Financial covenants, including: (i) the equity attributable to the shareholders of Formula, as reported in Formula's annual or quarterly financial statements, will not be less than \$160 million (for the Series A Secured Debentures) or \$215 million (for the Series C Secured Debentures); (ii) Formula's consolidated net financial indebtedness (financial indebtedness net of cash, marketable securities, deposits and other liquid financial instruments) shall not exceed 65% of net CAP (which is defined as financial indebtedness, net, plus shareholders equity); (iii) for the Series C Secured Debentures, Formula's consolidated net financial indebtedness shall not exceed five times EBITDA (which is defined as the consolidated net profit plus taxes, net financing expenses, depreciation and amortization and without expenses for employee stock option, expenses for transactions and on-time income/expenses); and (iv) at all times, Formula's cash balance will not be less than the annual interest payment (compounded) for the unpaid principal amount of the Series C Secured Debentures or the Series A Convertible Debentures (as applicable).

We have agreed to standard events of default under the Series A Secured Debentures and Series C Secured Debentures, together with the following additional events of default due to any of the following:

- cross default, excluding following an immediate repayment initiated in relation to the other series of debentures or other indebtedness (other than non-recourse debt) over NIS 75 million (\$21.6 million);
- suspension of trading of the debentures on the TASE over a period of 60 days;
- failure to have the debentures rated over a period of 60 days;
- if the rating of the debentures is less than BBB- by Standard and Poors Maalot or equivalent rating of other rating agencies;
- if there is a change in control without consent of the rating agency;
- if Formula fails to provide additional security when the loan-to-value of the securities securing the Series A Secured Debentures or Series C Secured Debentures (as applicable) falls below the required ratio;
- the existence of a real concern that Formula will not meet its material undertakings towards the debenture holders;
- the inclusion in Formula's financial statements of a note regarding the existence of significant doubt as to Formula's ability to continue as a going concern;
- breach of Formula's undertakings regarding the issuance of additional debentures;
- Formula's failure to continue to control any of its subsidiaries; and
- failure to comply with the negative pledge covenant.

Subsidiary and Affiliate Financing Activities

From time to time, our subsidiaries and affiliated companies also maintain credit facilities with banks and other financial institutions and issue debt instruments such as debentures in accordance with their cash requirements. These credit facilities and debentures include, inter alia, certain standard events of defaults related to our subsidiaries' operations, which restrict their ability to: (i) undergo a change of control, (ii) distribute dividends, (iii) incur debt or apply a floating charge on their assets, or (iv) undergo an asset sale or other change that would result in a fundamental change in their operations. The subsidiaries' and affiliated companies' indebtedness also requires that they comply with certain financial covenants, including maintenance of certain financial ratios related to their shareholders' equity, total rate of debt and liabilities, minimum outstanding balance of total cash and short-term investments and operating results that are customary for companies of their comparable size and the risk. Some of our subsidiaries' assets are pledged to the lender banks and debenture holders. If we or any of our subsidiaries do not meet the covenants specified in our credit agreements or indentures (or equivalent agreement with the debenture holders), and a waiver with respect to the fulfillment of such covenants has not been received from the lender bank or representative of the debenture holders, the lender bank or debenture holders (via the action of their representative) may foreclose on the pledged assets to satisfy a debt.

Currently, Matrix, Sapiens, Magic Software and Formula have such material credit facilities and/or debentures outstanding. The long-term debt obligations of Matrix bear fixed interest at an average annual rate of 2.50%-5.81% and floating interest at a rate of LIBOR + 2.2%. The long-term debt obligations of Magic Software bear fixed interest at an annual rate of 2.6%-5.0%. The long-term debt obligations of Sapiens bear fixed interest at an annual rate of 3.37%. These credit facilities and/or debentures expire over a period of time that ranges from one to seven years.

As of December 31, 2018, Matrix had aggregate short-term obligations to banks and others of NIS 187.3 million (approximately \$50.0 million) and aggregate long-term obligations to banks of NIS 406.5 million (approximately \$108.5 million) under its credit facilities. As of December 31, 2018, Magic Software had aggregate short-term obligations to banks and others of \$8.7 million and aggregate long-term obligations to banks and others of \$19.4 million under its credit facilities.

In November 2016, Magic Software obtained a NIS 120 million (approximately \$31.4 million) loan linked to the NIS from an Israeli institution. Magic Software intended to use the proceeds from this loan for its general corporate purposes, which may include the funding of its working capital needs and the funding of potential acquisitions. The principal amount of the loan is payable in seven equal annual payments with the final payment due on November 2, 2023 and bears a fixed interest rate of 2.60% per annum, payable in two semi-annually payments. The loan, which may be prepaid under certain circumstances, is subject to various financial covenants, which mainly consist of the following:

1. Magic Software equity will not be lower than \$100 million (one hundred million U.S. dollars) at all times.
2. Magic Software cash and cash equivalent and marketable securities available for sales will not be less than \$10 million (ten million U.S. dollars).
3. The ratio of Magic Software total financial debts to total assets will not exceed 50%.
4. The ratio of Magic Software total financial debts less cash, short-term deposits and short-term marketable securities to the annual EBITDA will not exceed 3.25 to 1.
5. Magic Software will not create any pledge on all of its property and assets in favor of any third party without the financial institution's consent

In September 2017, Sapiens issued NIS 280 million (approximately \$78.3 million, net of \$0.96 million of debt discount and issuance costs) principal amount of Series B unsecured, non-convertible debentures, in a public offering and private placement in Israel. Proceeds of such offering were utilized to repay the entire outstanding loan amount (including accrued interest) under a \$40 million credit agreement to which Sapiens had been party with HSBC Bank USA, National Association as financing for Sapiens' acquisition of StoneRiver. The outstanding principal amount of the Sapiens Series B debentures is linked to the US dollar and bears interest at an annual rate of 3.37%, to be paid on a semi-annual basis (on January 1 and July 1 of 2018 through 2025, with one final interest payment on January 1, 2026). The principal of the Sapiens Series B debentures is payable in eight equal annual payments beginning on January 1, 2019, with the final payment due on January 1, 2026. The first installment, in an amount of \$9.9 million, was paid on January 1, 2019.

In the deed of trust entered into by Sapiens with the trustee for the holders of its Series B debentures, Sapiens undertook to maintain a number of conditions and limitations on the manner in which it can operate its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on its assets, or undergo an asset sale or other change that results in a fundamental change in its operations. The deed of trust also requires Sapiens to comply with certain financial covenants, including maintenance of a minimum shareholders' equity level and a maximum ratio of financial indebtedness to shareholders' equity, at levels that are customary for companies of comparable size. The deed of trust furthermore provides for an upwards adjustment in the interest rate payable under the debentures in the event that the debentures' rating is downgraded below a certain level. A breach of the financial covenants for more than two successive quarters or a substantial downgrade in the rating of the debentures (below BBB-) could result in the acceleration of Sapiens' obligation to repay the debentures.

We believe that our current cash reserves, together with cash that may be distributed to us from the ongoing operations of our subsidiaries and any credit that we may choose to draw upon that is available under our (and our subsidiaries' and affiliated company's) existing credit facilities should be sufficient for our present working capital requirements for at least the next 12 months at our current level of operations. We may consider in the future additional equity issuances, debt issuances or borrowings from banks if necessary to meet cash needs for our growth, including if needed to consummate one or more acquisitions for consideration consisting of all or a substantial portion of our available cash. Should we require additional financing in the future, we cannot assure you that such financing will be available on favorable terms or at all.

On March 10, 2019, Formula reported publicly to the TASE and Israeli Securities Authority that Standard & Poor's Maalot, or S&P, had issued a credit rating of iLAA- for the new Series C Secured Debentures, for an aggregate principal amount of up to NIS 300 million (par value) that was subsequently issued and sold on March 31, 2019. That credit rating echoes the credit rating (iLAA-) for Formula's other current series of secured debentures (Series A Secured Debentures) that are traded on the TASE. S&P's credit rating for Formula as an issuer remained iLAA+/stable as of that report. The credit ratings are based on a number of factors and considerations.

On July 31, 2018, Sapiens reported publicly to the TASE and Israeli Securities Authority that S&P had reaffirmed Sapiens' corporate credit rating and its Series B Debentures' credit rating of i) iLA+ with stable outlook, and (ii) iLA+, respectively.

As of the date of the financial statements included in this annual report, each of Formula, Sapiens, Magic Software and Matrix were in compliance with each of their respective financial covenants.

Cash Provided by Operating Activities

Cash flow provided by our operating activities increased from \$81.1 million in 2017 to \$82.6 million in 2018.

Net cash provided by operating activities in 2018 consisted primarily of the cash generated by our subsidiaries' ongoing operating activities and of net income stemming therefrom, as adjusted for non-cash activity, including changes in operating assets and liabilities. The material upwards adjustments in cash flow reflecting non-cash activity included adjustments due to: (i) depreciation and amortization of capitalized research and development assets, other intangible assets (mainly customer relations) and property, plants and equipment, in an aggregate amount of \$48.7 million; (ii) an increase in trade payables and in other accounts payable and employees and payroll accrual, in an aggregate amount of \$32.7 million; (iii) stock-based compensation expenses, in an amount of \$4.0 million; (iv) an increase in deferred revenues, in an amount of \$3.0 million; (v) an increase in liabilities in respect of business combinations, in an amount of \$0.7 million; and (vi) an increase in employees benefit liabilities, in an amount of \$0.6 million. Material downwards adjustments in cash flow for non-cash activity, including changes in operating assets and liabilities, consisted of adjustments of: (i) an increase in trade receivables in an amount of \$66.1 million; (ii) an increase in other current and long-term accounts receivable, in an amount of \$5.8 million; (iii) change in deferred taxes, net, in an amount of \$5.7 million; (iv) change in value of debentures, in an amount of \$3.0 million; (v) change in value of short-term and long term loans from banks and others and deposits, net, in an amount of \$2.3 million; (vi) an increase in inventories, in an amount of \$1.0 million; and (vii) share of profit of companies accounted for at equity, net, in an amount of \$0.4 million.

Cash flow provided by operating activities in 2018 was primarily comprised of NIS 124.5 million (approximately \$37.2 million) provided by Matrix, \$27.7 million provided by Sapiens, \$24.1 million provided by Magic Software and approximately \$1.1 million provided by Insync, Michpal and Effective Solutions, offset by \$7.5 million used by Formula.

Net cash provided by operating activities in 2017 consisted primarily of the cash generated by our subsidiaries' ongoing operating activities and of net income stemming therefrom, as adjusted for non-cash activity, including changes in operating assets and liabilities. The material upwards adjustments in cash flow reflecting non-cash activity included adjustments due to: (i) depreciation and amortization of capitalized research and development assets, other intangible assets (mainly customer relations) and property, plants and equipment, in an aggregate amount of \$43.6 million; (ii) an increase in deferred revenues, in an amount of \$15.7 million; (iii) an increase in trade payables and in other accounts payable and employees and payroll accrual, in an aggregate amount of \$13.3 million; (iv) stock-based compensation expenses, in an amount of \$4.6 million; (v) changes in value of short-term and long term loans from banks and others and deposits in an amount of \$6.7 million; (vi) change in value of debentures of \$5.3 million, (vii) an increase in liabilities in respect of business combinations, in an aggregate amount of \$1.5 million; and (viii) a decrease in inventory of \$1.0 million. Material downwards adjustments in cash flow for non-cash activity, including changes in operating assets and liabilities, consisted of adjustments of (i) an increase in trade receivables in an amount of \$38.2 million, (ii) change in deferred taxes net in an amount of \$12.8 million and (iii) share of profit of companies accounted for at equity, net in an amount of \$1.1 million.

Cash flow provided by operating activities in 2017 was primarily comprised of \$50.2 million provided by Matrix, \$8.5 million provided by Sapiens, \$25.5 million provided by Magic and approximately \$2.8 million provided by Insync and Michpal, offset by \$6.0 million used by Formula.

Cash Provided by Financing Activities

Cash provided by financing activities was \$41.0 million in 2018 compared to \$19.0 million in 2017, mainly reflecting the cumulative effect of the following financing-related transactions that occurred over the course of those years:

Year Ended December 31, 2018

In May 2018, Formula declared a cash dividend to its shareholders of \$0.34 per share (or \$5.0 million in the aggregate), which was paid in June 2018.

In February 2018, Magic Software declared a dividend distribution to its shareholders of \$0.13 per share (or \$5.8 million in the aggregate), which was paid in March 2018, of which \$3.1 million was paid to non-controlling interests.

In August 2018, Magic Software declared a dividend distribution to its shareholders of \$0.155 per share (or \$7.6 million in the aggregate), which was paid in September 2018, of which \$4.1 million was paid to non-controlling interests.

In September 2018, Sapiens declared a cash dividend to its shareholders of \$0.20 per share (or \$10.0 million, in the aggregate), which was paid in October 2018, of which \$5.2 million was paid to non-controlling interests.

In March 2018, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 29.6 million (approximately \$8.5 million), of which \$4.3 million was paid to non-controlling interests.

In June 2018, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 25.9 million (approximately \$7.2 million), of which \$3.6 million was paid to non-controlling interests.

In September 2018, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 24.7 million (approximately \$6.8 million), of which \$3.5 million was paid to non-controlling interests.

In December 2018, Matrix distributed to its shareholders a cash dividend in an aggregate amount of NIS 22.2 million (approximately \$5.9 million), of which \$3.0 million was paid to non-controlling interests.

In addition, net cash provided by financing activities in 2018 was attributable to: (i) the issuance of Formula's additional Series A Secured Debentures in an amount of NIS 155.2 million (approximately \$45.6 million), excluding issuance costs of \$0.2 million, in a private placement in January 2018; (ii) receipt of long term loans in an amount of \$83.5 million; (iii) the issuance of Magic's ordinary shares in a private placement in July 2018 in an amount of \$25.4 million and (iv) exercise of employees' stock options in subsidiaries in an amount of \$1.2 million, offset in part by (i) repayment of long term loans from banks and others in an amount of \$42.9 million; (ii) a decrease in short-term bank credit, net in an amount of \$20.7 million; (iii) repayment of obligations under debentures in an aggregate amount of \$9.4 million; (iv) dividends paid to non-controlling interests in indirect subsidiaries in an amount of \$7.3 million; and (v) cash paid to purchase non-controlling interests in an amount of \$2.0 million.

Year Ended December 31, 2017

In December 2016, Formula declared a cash dividend to its shareholders of \$0.48 per share, which was paid in January 2017. The aggregate amount distributed by Formula was approximately \$7.1 million.

In September 2017, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in November 2017. The aggregate amount distributed by Formula was approximately \$5.0 million.

In March 2017, Matrix distributed to its shareholders a cash dividend in an aggregate amount of approximately \$6.7 million, of which \$3.4 million was paid to non-controlling interests in Matrix.

In June 2017, Matrix distributed to its shareholders a cash dividend in an aggregate amount of approximately \$5.9 million, of which \$3.0 million was paid to non-controlling interests in Matrix.

In September 2017, Matrix distributed to its shareholders a cash dividend in an aggregate amount of approximately \$4.9 million, of which \$2.5 million was paid to non-controlling interests in Matrix.

In December 2017, Matrix distributed to its shareholders a cash dividend in an aggregate amount of approximately \$7.0 million, of which \$3.5 million was paid to non-controlling interests in Matrix.

In December 2017, Sapiens distributed to its shareholders a cash dividend in an amount of \$0.20 per common share. The aggregate amount distributed by Sapiens was approximately \$9.9 million, of which \$5.1 million was paid to non-controlling interests in Sapiens.

In February 2017, Magic Software declared a cash dividend in an amount of \$0.085 per share that was paid on April 5, 2017. The aggregate amount distributed by Magic Software was approximately \$3.8 million, of which \$2.0 million was paid to non-controlling interests in Magic Software.

In August 2017, Magic Software declared a cash dividend in an amount of \$0.13 per share, which was paid on September 13, 2017. The aggregate amount distributed by Magic Software was approximately \$5.8 million, of which \$3.1 million was paid to non-controlling interests in Magic Software.

In addition, net cash provided by in financing activities in 2017 was attributable to (i) the issuance of Sapiens Series B debentures in the net amount of \$78.2 million, (ii) receipt of long term loans in an amount of \$52.7 million and (iii) exercise of employees' stock options in subsidiaries in an amount of \$3.2 million, offset by (i) repayment of long term loans from banks and others in an amount of \$46.1 million, (ii) a decrease in short-term bank credit, net in an amount of \$21.2 million, (iii) dividends paid to redeemable non-controlling interests in subsidiaries in an amount of \$7.5 million, (iv) repayment of debentures in an amount of \$3.7 million and (v) cash paid in conjunction with acquisition of activities in an amount of \$2.6 million.

Cash Used in Investing Activities

Net cash used in our investing activities was \$90.5 million in 2018, compared to \$107.1 million in 2017.

Net cash used in investing activities in 2018 was attributable to: (i) expenditures (net of cash acquired) with respect to business acquisitions in an aggregate amount of \$49.1 million; (ii) changes in short-term deposits, net in an amount of \$17.3 million, (iii) purchase of property and equipment in an amount of \$11.6 million; (iv) capitalization of software development and other costs in an amount of \$8.8 million; and (v) cash paid in conjunction with deferred payments and contingent liabilities related to business combinations in an amount of \$8.3 million. This cash use was offset in part by the following cash amounts provided by investing activities in 2018: (i) proceeds from maturity and sale of marketable securities, net in an amount of \$4.0 million; and (ii) proceeds from sale of property, plants and equipment in an amount of \$0.4 million.

Net cash used in investing activities in 2017 was attributable to: (i) expenditures (net of cash acquired) with respect to business acquisitions in an amount of \$119.1 million; (ii) purchase of property and equipment in an amount of \$9.6 million; (iii) capitalization of software development and other costs in an amount of \$9.3 million; (iv) cash paid in conjunction with deferred payments and contingent liabilities related to business combinations in an amount of \$8.8 million; and (v) changes in short term deposits, net in an amount of \$0.9 million. This cash use was offset in part by the following cash amounts provided by investing activities in 2017: (i) proceeds from sale of marketable securities, net in an amount of \$40.6 million.

Company Commitments

In January 2014, Formula agreed to the terms of a NIS 200 million loan (approximately \$57.6 million) that was extended to us by a leading Israeli institutional investor. The loan is secured by certain of the shares of each of our publicly held subsidiaries and affiliated company. The loan's average duration is approximately four years (paid over a period of 6 years) and carries a fixed annual interest rate of 5.5%. The terms of the loan are further described above under "Sources of Financing— Institutional Investor Loan" in this Item 5.B ("Liquidity and Capital Resources").

In September 2015, Formula consummated a public offering in Israel of its Series A Secured Debentures and Series B Convertible Debentures. The debentures were listed for trading only on the TASE. In the public offering, Formula issued and sold a total amount of NIS 227,260,000 (\$57.8 million) par value of the debentures, which were subdivided into Series A Secured Debentures and Series B Convertible Debentures. In January 2018, Formula issued and sold an additional NIS 150 million par value of Series A Secured Debentures for aggregate gross proceeds totaling NIS 155.2 million (approximately \$45.6 million), excluding issuance costs of \$0.2 million. In March 2019, Formula issued and sold an aggregate NIS 300 million par value amount of Series C Secured Debentures for aggregate gross proceeds of NIS 298.5 million (approximately \$82.2 million). No Series B Convertible Debentures remain outstanding as of the date of this annual report. For a description of the amounts outstanding under these debenture series and the related covenants and restrictions to which we are subject, please see "Israeli Debenture Offerings" above in this Item 5.B ("Liquidity and Capital Resources").

We do not have material commitments for capital expenditures by Formula as of December 31, 2018 or as of the date of this annual report.

We have entered into an undertaking to indemnify our office holders in specified limited categories of events and in specified amounts, subject to certain limitations. For more information, see "Item 7. Major Shareholders and Related Party Transactions—Related Party Transactions—Indemnification of Office Holders."

Subsidiary Commitments

Our subsidiaries do not have any material commitments for capital expenditures as of December 31, 2018 or as of the date of this annual report.

As alluded to above (see “Sources of Financing—Subsidiary and Affiliate Financing Activities” in this Item 5.B (“Liquidity and Capital Resources”)), the loan agreements, debentures and indentures to which we are party contain a number of conditions and limitations on the way in which we (Matrix, Sapiens, Magic Software and Formula) can operate our businesses, including limitations on our ability to raise debt and sell or acquire assets not in normal business activity. For example, Matrix’s loan agreement includes a negative pledge with respect to Matrix’s assets, as well as limitations on Matrix’s ability to provide guarantees to third parties and sell or transfer its assets. Matrix’s loan agreements also contain various covenants which require it to maintain certain financial ratios related to shareholders’ equity and operating results that are customary for companies of comparable size.

Our subsidiaries and affiliate as of December 31, 2018 have provided bank guarantees aggregating to approximately \$27.8 million as security for the performance of various contracts with customers. If our subsidiaries and affiliates were to breach certain terms of such contracts, the customers could demand that the banks providing the guarantees pay amounts claimed to be due.

Our subsidiaries and affiliate as of December 31, 2018 have also provided additional bank guarantees aggregating to \$4.7 million as security for rent to be paid for their offices. If our subsidiary and affiliate were to breach certain terms of their leases, the lessors could demand that the banks providing the guarantees pay amounts claimed to be due.

Pursuant to the credit agreement and the Series A Secured Debentures and Series C Secured Debentures described above, liens have been incurred over a certain portion of our investment in outstanding shares of Matrix, Sapiens and Magic Software, in respect of the amounts shown in the table below:

	As of March 31, 2019		
	(in U.S. dollars)		
	Financial institution credit agreement	Formula’s Series A Secured Debentures	Formula’s Series C Secured Debentures
Matrix ordinary shares, par value NIS 1.0 per share	1,569,098	4,128,865	6,031,761
Magic Software ordinary shares, par value NIS 0.1 per share	760,323	5,825,681	2,411,474
Sapiens common shares, par value €0.01 per share	511,920	1,260,266	2,957,590

We and IAI have granted TSG, our jointly controlled affiliate, in equal share, a guarantee of NIS 40 million (approximately \$10.7 million) as security against TSG’s bank credit line and bank guarantees issued by TSG for the performance of various contracts with its customers.

C. Research and Development, Patents and Licenses, etc.

The net amounts that we spent on research and development activities in 2017 and 2018 were \$39.9 million and \$22.3 million, respectively. For more information about our research and development activities, see “Item 4. Information on the Company—Business Overview—Software Development.”

For information concerning our intellectual property rights, see “Item 4. Information on the Company—Business Overview—Intellectual Property Rights.”

D. Trend Information

For trend information, please see the discussion in Item 4. “Information on the Company—Business Overview” and Item 5. “Operating and Financial Review and Prospects—Results of Operations.”

E. Off-Balance Sheet Arrangements

We are not a party to any off-balance sheet arrangements. In addition, we have no unconsolidated special purpose financing or partnership entities that are likely to create material contingent obligations.

F. Tabular Disclosure of Contractual Obligations

The following table summarizes our contractual obligations and commitments as of December 31, 2018.

	Payments due by period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
	(U.S. dollars, in thousands)				
Long-term debt obligations ⁽¹⁾	213,465	66,403	87,299	59,763	
Lease obligations	99,018	28,267	36,539	18,413	15,799
Liabilities in respect of the acquisitions of operations	11,621	5,602	5,819	200	
Debentures	185,004	58,055	44,363	42,001	40,585
Liability to the Innovation Authority ⁽²⁾	433	433			
Uncertainties in income taxes ⁽³⁾	7,384				
Accrued severance payments, net ⁽⁴⁾	11,827				
Total	528,752	158,760	174,020	120,337	56,384

(1) Includes interest.

(2) Does not include contingent liabilities to the Innovation Authority of approximately \$6.2 million as described in Note 17(f) to our consolidated financial statements contained elsewhere in this annual report.

(3) Payment of uncertain tax benefits would result from settlements with taxation authorities. Due to the difficulty in determining the timing of settlements, this information is not included in the above table. We do not expect to make any significant payments for these uncertain tax positions within the next 12 months.

(4) Accrued severance payments, net relate to accrued severance obligations and notice obligations mainly to our Israeli employees as required under Israeli labor law or personal employment agreements. We are legally required to pay severance upon certain circumstances, primarily upon termination of employment by our company, retirement or death of the respective employee. Our liability for all of our Israeli employees is fully provided for by monthly deposits with insurance policies and by an accrual.

ITEM 6. DIRECTORS, SENIOR MANAGEMENT AND EMPLOYEES**A. Directors and Senior Management**

The following table sets forth information about our directors and senior management as of April 30, 2018.

Name	Age	Position	Expiration of Current Term of Directorship/Office
Guy Bernstein	51	Chief Executive Officer	December 2019 or upon 180 days advanced written notice of either party
Asaf Berenstein	41	Chief Financial Officer	No formal arrangement regarding expiration of term of office
Maya Solomon-Ella	41	Chief Operational Officer	No formal arrangement regarding expiration of term of office
Marek Panek	49	Chairman of the Board of Directors	2019 annual shareholders meeting
Rafal Kozlowski	45	Director	2019 annual shareholders meeting
Ohad Melnik ^{(1) (3)}	48	Director	2019 annual shareholders meeting
Eli Zami ^{(1) (2) (3)}	50	External director	January 2022
Iris Yahal ^{(1) (2) (3)}	57	External director	January 2022

(1) Serves on the audit committee of our board of directors.

(2) Serves as an external director under the Companies Law. See “Item 6. Directors, Senior Management and Employees—Board Practices—External Directors under the Companies Law; Audit Committee; Internal Auditor; Approval of Certain Transactions under the Companies Law,” below.

(3) Serves on the compensation committee of our board of directors.

Guy Bernstein has served as our Chief Executive Officer since January 2008. Mr. Bernstein served as a member of our board of directors from November 2006 to December 2008. Mr. Bernstein served as a director of Emblaze Ltd., or Emblaze, our former controlling shareholder and a publicly-traded company listed on the London Stock Exchange, from April 2004 until February 2011. From December 2006 to November 2010, Mr. Bernstein also served as chief executive officer of Emblaze, and, prior thereto, from April 2004 to December 2006, as the chief financial officer of Emblaze. Mr. Bernstein serves as the chairman of the board of directors of each of Matrix and Sapiens and as chief executive officer and director of Magic Software, where he served as the chief financial and operations officer from 1999 until 2004, when he joined Emblaze. He joined Magic Software from Kost Forer Gabbay & Kasierer, a member of Ernst & Young Global, where he served as senior manager from 1994 to 1997. Mr. Bernstein also serves as a director of Michpal Micro Computers (1983) Ltd., a director at TSG IT Advanced Systems Ltd., and is a director at inSync staffing, all of them are subsidiaries of Formula Systems. Mr. Bernstein holds a B.A. degree in accounting and economics from College of Management and is a certified public accountant in Israel.

Asaf Berenstein has served as our Chief Financial Officer since November 2011. Mr. Berenstein also serves as the Chief Financial Officer of our subsidiary, Magic Software, since April 2010. Prior to such time, beginning in August 2008, Mr. Berenstein served as Magic Software’s corporate controller. Mr. Berenstein also serves as a director of Michpal Micro Computers (1983) Ltd., a director at TSG IT Advanced Systems Ltd., and is a director at inSync staffing, all of them are subsidiaries of Formula Systems. Prior to joining our company, Mr. Berenstein served as a controller at Gilat Satellite Networks Ltd. (NASDAQ: GILT), commencing in July 2007. From October 2003 to July 2007, Mr. Berenstein practiced as a certified public accountant at Kesselman & Kesselman, a member of PriceWaterhouseCoopers. Mr. Berenstein holds a B.A. degree in accounting and economics and an M.B.A. degree, both from Tel-Aviv University, and is a certified public accountant (CPA) in Israel.

Maya Solomon-Ella has served as our Chief Operational Officer since September 2016. In her last position Maya served as the Transaction Support leader in Ernst & Young Israel (Tel-Aviv branch). Maya served in Ernst & Young 13 years, three of which were with the Assurance Services team (Hi Tech) and 10 of which have been spent in the Transaction Advisory Services (TAS) group. Since joining the TAS group at Ernst & Young, Ms. Solomon-Ella has been involved in M&A transactions across the globe. Ms. Solomon-Ella holds a B.A. degree in Economics-Accounting from Bar Ilan University and is a Certified Public Accountant (CPA) in Israel.

Marek Panek has served as one of our directors since November 2010. Since January 2007 he has been the Executive Board Member of Asseco Poland S.A. and he is responsible for supervising the Capital Group Development Division and the EU Projects Office. Mr. Panek also holds and has held several other positions at Asseco and its affiliates, including Executive Board Member in Asseco International, a.s. (since October 2017), Supervisory Board Member of Asseco Central Europe, a.s. (since September 2011), Member of Board of Directors of Asseco Denmark (since March 2011) and Peak Consulting Group ApS (since January 2016), Supervisory Board Member of Asseco Lietuva UAB (since June 2011), Chairman of GSTN Consulting Sp. z o.o. (since November 2017), Supervisory Board Member of Asseco Innovation Fund Sp. z o.o. (since December 2018) and Chairman of the Supervisory Board of Nextbank Software (since March 2019). Mr. Panek first joined Asseco in 1995, having served in the following positions for the following periods of time: Marketing Specialist (from September 1995 to September 1996); Marketing Director (from October 1996 to March 2003); Sales and Marketing Director (from April 2003 to March 2004); and Member of the Board, Sales and Marketing Director (from March 2004 to January 2007). Prior to joining Asseco, Mr. Panek was employed at the ZE Gantel Sp. z o.o. from 1993 to 1995. Mr. Panek graduated from the Faculty of Mechanical Engineering and Aeronautics of the Rzeszów University of Technology in 1994, having been awarded a master's degree in engineering.

Rafal Kozlowski has served as one of our directors since August 2012. Since June 2012, Mr. Kozlowski has served as Vice President of the Management Board and Chief Financial Officer of Asseco. Mr. Kozlowski is also a member of the Asseco Group Board of Directors. From May 2008 to May 2012, Mr. Kozlowski served as Vice President of Asseco South Eastern Europe S.A. responsible for the company's financial management. Mr. Kozlowski was directly involved in the acquisitions of companies incorporated within the holding of Asseco South Eastern Europe, as well as in the holding's IPO process at the Warsaw Stock Exchange. From 1996 to 1998, he served as Financial Director at Delta Software, and subsequently, from 1998 to 2003 as Senior Manager at Veraudyt. In the years 2004-2006, he was Head of Treasury Department at Softbank S.A. where he was delegated to act as Vice President of Finance at the company's subsidiary Sawan S.A. From 2007 through June 2009, he served as Director of Controlling and Investment Division at Asseco Poland S.A. Mr. Kozlowski graduated of the University of Warsaw, obtaining Master's degree at the Faculty of Organization and Management in 1998. He completed the Project Management Program organized by PMI in 2004, and the International Accounting Standards Program organized by Ernst & Young Academy of Business in the years 2005-2006.

Ohad Melnik was elected to our board of directors in January 2019. Mr. Melnik has served as the director of the payment methods department and the finance compliance department of IFOREX International Group since 2004. From 2002 through 2004, Mr. Melnik served as the security officer and logistic planner of Danagis Ltd. In addition, from 2008 through 2015, Mr. Melnik served as a director of Peninsula Group Ltd. From 2012 through 2015, Mr. Melnik served as a director of Jerusalem Technology Investments Ltd. Mr. Melnik holds a B.A. degree in business administration and an M.B.A. degree (cum laude) from the College of Management. Mr. Melnik also graduated from the Executive MS Finance Program of the Baruch College, City University of New York (with Honors).

Eli Zamir has served as one of our external directors, as a member of our audit committee since April 2013 and a member of our compensation committee since July 2013. Mr. Zamir currently serves as an independent financial advisor. From 2007 to December 2014 Mr. Zamir served as the CEO of Invest Pro Ltd., a private investment firm. From 1995 to 2002, Mr. Zamir served as a portfolio manager and from 2002 to 2007 Mr. Zamir served as the CEO of an underwriter. Until 2014, Mr. Zamir served as a director of Synopsis Ltd., a public company listed on the TASE. Mr. Zamir holds a B.A. degree in accounting and finance from Tel-Aviv University and an M.B.A. degree, from Ben Gurion University.

Iris Yahal has served as one of our external directors, the chairperson of our audit committee since April 2013 and a member of our compensation committee since July 2013. Ms. Yahal has also served as an external director and chairperson of the audit committee of Formula Vision Technologies, Ltd. (TASE: FTV) since 2017. Ms. Yahal is an independent strategic transaction advisor for various software, renewable energy, infrastructure and biotech companies since 2007. From 1995 through 2007, Ms. Yahal served as Chief Financial Officer of BluePhoenix Solutions Ltd., a public company listed on the NASDAQ Global Market and the TASE. In addition, from 1999 through 2007 Ms. Yahal served as a director of BluePhoenix Solutions and each of its international subsidiaries. From 1991 until 1996, Ms. Yahal served as a controller at Argotech Ltd. which, at that time, was a wholly owned subsidiary of our company, operating as a start-up incubator. Prior to 1991, Ms. Yahal worked as an auditor with Wallenstein and Co., a public accounting firm. Ms. Yahal holds a B.A. degree in accounting and statistics and an M.B.A degree in business administration, both from Tel- Aviv University and is a certified public accountant in Israel.

Arrangements for the Election of Directors; Family Relationships

Asseco is our largest shareholder, holding 25.4% of our outstanding share capital and voting rights to approximately 38.3% of our outstanding share capital (each of which excludes shares that we have repurchased that lack voting rights and shares subject to restrictions that are voted in proportion to the votes of our other shares. Asseco has significant influence over the election of the members of our board of directors (other than our external directors). Other than as described immediately above, there are no arrangements or understandings with major shareholders, customers, suppliers or others pursuant to which any of our directors or members of senior management were selected as such.

Mr. Guy Bernstein and Mr. Asaf Berenstin are first cousins. Other than such relationship, there are no family relationships among our executive officers and directors.

B. Compensation

Aggregate Compensation Paid to Directors and Executive Officers

Formula paid to its directors and executive officers, consisting of the individuals listed above in the table under “—Directors and Senior Management” (substituting Dafna Cohen for Ohad Melnik, since Ms. Cohen served as a director throughout 2018, before her term concluded and Mr. Melnik replaced her on the board in January 2019), direct remuneration and provided related benefits of approximately \$2.3 million, in the aggregate, with respect to 2018. This aggregate compensation amount includes amounts set aside or accrued to provide pension, retirement or similar post-employment benefits, which themselves totaled \$10,000 in 2018. This aggregate compensation amount furthermore includes expenses recorded with respect to equity-based compensation in a total amount of \$0.2 million for 2018.

The above aggregate compensation amount does not, however, include the following:

- expenses, including business travel, professional and business association dues and expenses, for which Formula reimburses its officers; and
- other fringe benefits that companies in Israel commonly reimburse or pay to their officers,

as amounts incurred for such expenses and benefits in 2018 were paid in reimbursement of activities carried out by our directors and executive officers for strict business purposes in carrying out their duties on behalf of Formula and were therefore not compensatory in nature.

The above aggregate compensation amount includes payment of directors’ fees. Formula compensates its external directors and other directors in accordance with the regulations promulgated under the Companies Law.

Summary Compensation Table

For so long as we qualify as a foreign private issuer, we are not required to comply with the executive compensation disclosure requirements applicable to U.S. domestic companies, including the requirement to disclose information concerning the amount and type of compensation paid to our chief executive officer, chief financial officer and the three other most highly compensated executive officers on an individual basis. Nevertheless, regulations promulgated under the Companies Law require us to disclose the annual compensation of our five most highly compensated office holders (as defined in the Companies Law) on an individual basis. Under the Companies Law regulations, this disclosure is required to be included in the annual proxy statement for our annual meeting of shareholders, which we furnish to the SEC under cover of a Report of Foreign Private Issuer on Form 6-K. Because of that disclosure requirement under Israeli law, we are also including that information in this annual report, pursuant to the disclosure requirements of Form 20-F.

The table below reflects the compensation paid to our five most highly compensated office holders (each of whom is a member of our management) during or with respect to the year ended December 31, 2018. All amounts reported in the table reflect the cost to the Company, as recognized in our financial statements for the year ended December 31, 2018.

Compensation of Management⁽¹⁾

Name and Position ^{(2), (3)}	Salary (\$)	Benefits And Perquisites (\$)	Variable Compensation (\$)	Equity Based Compensation (\$) ⁽⁵⁾
Guy Bernstein – CEO	517,000	(4)	(6)	-
Maya Solomon-Ella – COO	132,000	32,000	28,000	25,000

(1) All amounts reported in the table are in terms of cost to Formula, as recorded in Formula’s financial statements. We have two office holders who are members of management who are compensated by Formula (CEO and COO). For disclosure concerning compensation paid by us to our remaining four most highly compensated office holders (all of whom are directors), please see the table under “Compensation of Directors” below.

(2) The executive officers listed in the table are full-time employees or consultants of Formula. Cash compensation amounts denominated in currencies other than the U.S. dollar were converted into U.S. dollars at the average conversion rate for 2018.

- (3) Our Chief Financial Officer, Asaf Berenstin, also serves as the chief financial officer of Magic Software. Pursuant to an agreement between Magic Software and Formula, Mr. Berenstin allocates 30%-40% of his time to Formula. Because he is not compensated by Formula, Mr. Berenstin is not listed in this table. However, Formula recognized an expense of \$210,000 in 2018 with respect to restricted shares granted to Mr. Berenstin.
- (4) Amounts reported in this column include benefits and perquisites, including those mandated by applicable law. Such benefits and perquisites may include, to the extent applicable to the executive officer, payments, contributions and/or allocations for savings funds, pension, severance, vacation, car or car allowance, medical insurances and benefits, risk insurances (e.g., life, disability, accident), convalescence pay, payments for social security, tax gross-up payments and other benefits and perquisites consistent with our guidelines.
- (5) Amounts reported in this column represent the expense recorded in our financial statements for the year ended December 31, 2018 with respect to equity-based compensation. Assumptions and key variables used in the calculation of such amounts are described in Note 17(b) to our consolidated financial statements, contained elsewhere in this annual report.
- (6) Under his service agreement with us, our chief executive officer, is entitled to an annual bonus in an amount equal to 3.3% of our net profit (including capital gains) after tax. An advance of 70% of the estimated bonus with respect to each year is paid over the course of the year, divided into quarterly installments, which is estimated based on our quarterly financial statements and is subject to final adjustment at the end of the year.

Compensation of Directors

The following table sets forth information with respect to compensation of our directors (none of whom serves as an employee of our company) during fiscal year 2018. The fees to the directors were paid by Formula.

Name and Principal Position	Total Fees Earned or Paid in Cash (\$)⁽¹⁾
Marek Panek - Chairman	37,000
Rafal Kozlowski - Director	37,000
Dafna Cohen ⁽²⁾ - Director	43,000
Eli Zamir - External Director	44,000
Iris Yahal- External Director	65,000

- (1) All amounts reported in the table are in terms of cost to Formula, as recorded in Formula's financial statements.
- (2) Ms. Cohen served as our director throughout 2018. Her term concluded at the January 2019 special shareholder meeting, when she was replaced by Mr. Ohad Melnik.

Option Grants to, and Service Agreement with, Chief Executive Officer

In January 2009, we granted to our Chief Executive Officer, Mr. Guy Bernstein, in connection with his service agreement with us, options to purchase 396,000 Formula ordinary shares, exercisable at an exercise price of NIS 0.01 per share. These options were to vest over a three-year period, commencing on December 17, 2008, on a quarterly basis (except that they would accelerate immediately prior to the announcement of Formula's 2010 dividend). In accordance with the accelerated vesting provisions of the grant, Mr. Bernstein exercised all of the options in April 2010, prior to the distribution by Formula of its 2010 dividend. In accordance with the terms of the option grant, the shares issued upon exercise of the option were deposited with a trustee and Mr. Bernstein was not permitted to vote or dispose of them until the shares were to be released from the trust, as described in the grant letter. In January 2011, in contemplation of our amendment and extension of Mr. Bernstein's service agreement with us, our board of directors determined that it was consistent with the intent of the original grant to immediately release from the trust 135,960 shares that had been issued upon exercise, after the lapse of two years since the option grant date. As of December 31, 2011 the remaining 260,040 shares were fully vested, although they remained in the trust.

In March 2011, concurrently with the amendment and extension of our Chief Executive Officer's service agreement, we granted to him options that were immediately exercisable for 543,840 redeemable ordinary shares of Formula. The options were to vest, i.e., our redemption right with respect to the options and the underlying ordinary shares issuable upon exercise was to lapse, in equal quarterly installments over a four year period that commenced in December 2011 and was to conclude in December 2015. The exercise price of the options was NIS 0.01 per share. Total fair value of the grant was calculated based on the share price on the grant date and totaled \$9.06 million (\$16.65 per share). In May 2011, Mr. Bernstein exercised all of these options for redeemable shares.

In December 2011, at which time we were negotiating an amendment and extension of our Chief Executive Officer's service agreement, we redeemed all of the above-described 543,840 shares for no consideration. In March 2012, concurrently with the amendment and extension of our Chief Executive Officer's service agreement, we approved a grant of options to him, exercisable for 1,122,782 ordinary shares of Formula as long as the Chief Executive Officer is (i) a director of Formula and/or (ii) a director of each of the directly held subsidiaries of Formula; provided that if he fails to meet the foregoing requirement (A) due to the request of the board of directors of either Formula or any of its directly held subsidiaries (other than a request which is based on actions or omissions by the Chief Executive Officer that would constitute "cause" under his service agreement with Formula), (B) because the Chief Executive Officer is prohibited under the governing law or charter documents of the relevant company or the stock exchange rules and regulations applicable to such company from being a director of such company (other than due to his actions or omissions) or (C) notwithstanding the Chief Executive Officer's willingness to be so appointed (but provided that neither (A) nor (B) applies); then, in each of (A), (B) and (C), the Chief Executive Officer will be deemed to have complied with clauses (i) or (ii) above. The options vest, i.e., our redemption right with respect to the options and the underlying ordinary shares issuable upon exercise lapses, in equal quarterly installments over an eight year period that commenced in March 2012 and concludes in December 2019. Notwithstanding the foregoing, if a change of control of the Company occurs, then all unvested options and/or restricted shares will immediately become vested. The exercise price of the options is NIS 0.01 per share. In accordance with the terms of the option grant, the shares issuable upon exercise of the option will be deposited with a trustee and our Chief Executive Officer will not be permitted to vote or dispose of them until the shares are released from the trust, as described in the grant letter.

In June 2013, all 1,122,782 options were exercised into ordinary shares. Such ordinary shares have been deposited with a trustee and, pursuant to the terms of our 2011 Plan and the option agreement with respect to such options, our chief executive officer is not permitted to vote or dispose of them until the shares are released from the trust. All shares participate in dividends and have the right to vote, however for so long as the shares are held by the trustee (even if they have vested) the voting rights may only be exercised by the trustee. In accordance with the guidelines of our 2011 Share Incentive Plan for so long as the shares underlying any grant under the plan are being held by the trustee they will be voted by the trustee in the same proportion as the results of the other shares voting in the shareholder meeting. Only those shares for which the vesting period has expired may be collected from the trustee. On August 3, 2017 and August 22, 2017 Asseco sold 2,356,605 and 589,151, respectively, Formula ordinary shares, representing 20% of our outstanding share capital, to 11 Israeli financial institutions and to our Chief Executive Officer, respectively, in privately negotiated sales transactions. The sale resulted in a decrease of Asseco's equity interest in Formula from 46.3% to 26.3% and its loss of control of Formula. In accordance with Mr. Guy Bernstein's share based award plan, that loss of control in the Company resulted in the immediate acceleration of all his unvested shares, which amounted to 350,869 as of such date. As of April 30, 2018, all 1,122,782 shares were fully vested, although they remained in the trust.

Under his service agreement with us, Mr. Guy Bernstein, as our Chief Executive Officer, is entitled to a monthly salary, as well as an annual bonus in an amount equal to 3.3% of our net profit (including capital gains) after tax. An advance of 70% of the estimated bonus with respect to each year is paid over the course of the year, divided into quarterly installments, which is estimated based on our quarterly financial statements and is subject to final adjustment at the end of the year.

Restricted Share Grants to Chief Financial Officer

In November 2014, our board of directors awarded our Chief Financial Officer, Asaf Berenstin, 10,000 restricted shares under the 2011 Plan, or the Restricted Shares. The Restricted Shares vest on a quarterly basis over a four-year period, which commenced on November 13, 2014 and concludes on November 13, 2018, provided that during such time the Chief Financial Officer will continue to serve as (i) an officer of the Company and/or (ii) an officer in one of the directly held affiliates. If the Chief Financial Officer fails to meet the service condition due to the request of the board of directors of either Formula or any of its directly held affiliates (other than a termination of his provision of services which is based on actions or omissions by him that will constitute "cause" under his grant agreement with Formula), then, he will be deemed to have complied with clauses (i) or (ii) above. If a change of control of the Company occurs, then all unvested Restricted Shares will immediately become vested. Total fair value of the grant was calculated based on the Formula share price on the grant date and amounted to \$239,000 (\$23.9 per share). As a result of Asseco's sale of Formula ordinary shares representing 20% of our outstanding share capital in August 2018, as described above, Asseco lost control of Formula. In accordance with Mr. Berenstin's share-based award plan, such loss of control resulted in the immediate acceleration of all his unvested Restricted Shares, which amounted to 3,125 as of that date. As of March 31, 2019, all 10,000 Restricted Shares awarded to Mr. Berenstin are fully vested, although they remain in the trust.

In August, 2017, our board of directors awarded our Chief Financial Officer, Asaf Berenstin, 10,000 additional restricted shares under the 2011 Plan. These additional restricted shares vest on a quarterly basis over a three-year period, which commenced on August 17, 2017 and concludes on August 16, 2020, provided that during such time the Chief Financial Officer continues to serve as (i) an officer of the Company and/or (ii) an officer in one of our directly held affiliates. If he fails to meet the service condition due to the request of the board of directors of either Formula or any of its directly held affiliates (other than a termination of his provision of services which is based on actions or omissions by him that will constitute "cause" under his grant agreement with Formula); then, the Chief Financial Officer will be deemed to have complied with clauses (i) or (ii) above. Notwithstanding the foregoing, if a change of control of Formula occurs, then all unvested additional restricted shares will immediately become vested. Total fair value of the grant was calculated based on the Formula share price on the grant date and amounted to \$371,000 (\$37.11 per share). As of March 31, 2019, all 10,000 additional restricted shares were deposited with the trustee, of which 5,000 shares have vested.

Restricted Share Grants to Chief Operational Officer

In November, 2018, our board of directors awarded our Chief Operational Officer, Maya Solomon, 10,000 restricted shares under the 2011 Plan. These additional restricted shares vest on an annual basis over a four-year period, which commenced on November 19, 2018 and concludes on November 18, 2022, provided that during such time the Chief Operational Officer continues to serve as (i) an officer of the Company and/or (ii) an officer in one of our directly held affiliates (we refer to this as the Service Condition). In the event that the Service Condition is no longer satisfied, the granted restricted shares that have not yet vested will terminate automatically and the unvested portion of the granted restricted shares will be returned to the Company within 90 days after the first day after the Service Condition is no longer satisfied, while all granted restricted shares that have vested will be transferrable to our Chief Operational Officer over a 90-day period after the last day on which the Service Condition is satisfied, unless the failure of the Service Condition to be satisfied was due to circumstances that would revoke the right to severance payments under Section 17 of the Israeli Severance Payments Law, 1963, in which case all granted restricted shares, whether or not they have vested, will automatically terminate. The total fair value of the grant was calculated based on the Formula share price on the grant date and amounted to \$382,150 (\$38.21 per share). As of March 31, 2019, all 10,000 additional restricted shares were deposited with the trustee and none of which are yet to be vested.

For a description of our 2008 Share Option Plan and 2011 Share Incentive Plan pursuant to which options or share awards may be granted from time to time to our directors, executive officers, employees and consultants, see “Item 6.E. Share Ownership— Arrangements Involving the Issuance or Grant of Equity Awards” below.

C. Board Practices

Pursuant to our amended and restated articles of association, or our articles, directors are generally elected at the annual general meeting of shareholders by a vote of the holders of a majority of the voting power represented at the meeting. Our existing board of directors may also appoint a new director to the board, assuming that the then-authorized size of the board, as last approved by our shareholders, exceeds the number of directors then serving on the board, whether due to a resignation or otherwise, in which case the newly appointed director holds office until the next annual general meeting of shareholders immediately following such appointment. Our board is currently comprised of five persons, of which each of Dafna Cohen (who served as a director throughout 2018, before her term concluded at our special shareholder meeting in January 2019, when Mr. Ohad Melnik replaced her on the board), Eli Zamir and Iris Yahal has been determined by the board to be independent within the meaning of the Listing Rules of the NASDAQ Stock Market (or the NASDAQ listing rules), on which our ADSs are listed for trading. Mr. Zamir and Ms. Yahal serve as our external directors, as mandated under Israeli law, and are therefore subject to additional criteria to help ensure their independence. See “External Directors Under the Companies Law” below. Each of our directors, except for the external directors, holds office until the next annual general meeting of shareholders and may then be re-elected. Our officers are appointed by our board of directors.

Under the Companies Law, a person who lacks the necessary qualifications and the ability to devote an appropriate amount of time to the performance of his or her duties as a director shall not be appointed director of a publicly traded company. While determining a person’s compliance with such provisions, the company’s special requirements and its scope of business shall be taken into consideration. Where the agenda of a shareholders meeting of a publicly traded company includes the appointment of directors, each director nominee should submit a declaration to the company confirming that he or she has the necessary qualifications and that he or she is able to devote an appropriate amount of time to performance of his or her duties as a director. In the declaration, the director nominee should specify his or her qualifications and confirm that the restrictions set out in the Companies Law do not apply.

Under the Companies Law, if a director ceases to comply with any of the requirements provided in the Companies Law, such director must immediately notify the company, and his or her term of service shall terminate on the date of the notice.

External Directors Under the Companies Law

Under the Companies Law, companies incorporated under the laws of Israel whose shares have been offered to the public in or outside of Israel, are required to appoint at least two external directors. This law provides that a person may not be appointed as an external director if the person is a relative of the controlling shareholder of the company or if that person or his or her relative, partner, employer, another person to whom he or she was directly or indirectly subject, or any entity under the person's control, has, as of the date of the person's appointment to serve as external director, or had, during the two years preceding that date: (a) any affiliation or other disqualifying relationship with the company, with any person or entity controlling the company or a relative of such person, or with any entity controlled by or under common control with the company; or (b) in the case of a company with no shareholder holding 25% or more of its voting rights, had at the date of appointment as an external director, any affiliation or other disqualifying relationship with a person then serving as chairman of the board or chief executive officer, a holder of 5% or more of the issued share capital or voting power in the company or the most senior financial officer. The term "affiliation" and the similar types of prohibited relationships include:

- an employment relationship;
- a business or professional relationship, even if not maintained on a regular basis (but excluding a *de minimis* level relationship);
- control; and
- service as an office holder.

The term "office holder" is defined under the Israeli Companies Law as a general manager (i.e., chief executive officer), chief business manager, deputy general manager, vice general manager, any other person assuming the responsibilities of any of these positions regardless of that person's title, a director and any other manager directly subordinate to the general manager.

No person may serve as an external director if the person's position or other business activities create, or may create, a conflict of interest with the person's responsibilities as an external director or may otherwise interfere with the person's ability to serve as an external director or if the person is an employee of the Israel Securities Authority or of an Israeli stock exchange. A person may furthermore not continue to serve as an external director if he or she received, during his or her tenure as an external director, direct or indirect compensation from the company including amounts paid pursuant to indemnification or exculpation contracts or commitments and insurance coverage for his or her service as an external director, other than as permitted by the Israeli Companies Law and the regulations promulgated thereunder. If, at the time of election of an external director, all other directors who are not the company's controlling persons or their relatives are of the same gender, the external director to be elected must be of the other gender. A director of one company may not be appointed as an external director of another company if a director of the other company is acting as an external director of the first company at such time.

External directors are elected by a majority vote at a shareholders' meeting, provided that either:

- such majority includes at least a majority of the shares held by all shareholders who are not controlling shareholders and do not have a conflict of interest (referred to under the Companies Law as a "personal interest") in the election of the external director (other than a personal interest not deriving from a relationship with a controlling shareholder) that are voted at the meeting, excluding abstentions, to which we refer as a disinterested majority, or
- the total number of shares voted by non-controlling shareholders and by shareholders who do not have a personal interest in the election of the external director against the election of the external director does not exceed two percent (2%) of the aggregate voting rights in the company.

According to regulations promulgated under the Israeli Companies Law, a person may be appointed as an external director only if he or she has professional qualifications or if he or she has accounting and financial expertise (each, as defined below). In addition, at least one of the external directors must be determined by our board of directors to have accounting and financial expertise. A director with "accounting and financial expertise" is a director that due to his or her education, experience and skills has a high expertise and understanding in financial and accounting matters and financial statements, in such a manner which allows him to deeply understand the financial statements of the company and initiate a discussion about the presentation of financial data. A director is deemed to have "professional qualifications" if he or she either (i) has an academic degree in economics, business management, accounting, law or public service, (ii) has an academic or other degree or has completed other higher education, all in the field of business of the company or relevant for his/her position, or (iii) has at least five years experience serving in one of the following capacities, or at least five years of cumulative experience serving in two or more of the following capacities: (a) a senior business management position in a company with a significant volume of business; (b) a senior position in the company's primary field of business; or (c) a senior position in public administration or service. Our board of directors has determined that Ms. Iris Yahal and Mr. Eli Zamir have the requisite professional qualifications and expertise as required of our external directors under the Companies Law.

An external director may be removed from office only: (i) by a court, upon determination that the external director to be so removed ceased to meet the statutory qualifications for his or her appointment or if he or she violated his or her duty of loyalty to the company or (ii) by the same percentage of shareholders, acting through a shareholders meeting, as is required for his or her election, if the board of directors has determined that the external director to be so removed has ceased to meet the statutory qualifications for his or her appointment or violated his or her duty of loyalty to the company and has proposed the removal to the shareholders. An external director who ceases to meet the conditions for his or her service as such must notify the company immediately and such service shall cease immediately upon such notification.

The initial term of an external director is three years and may be extended by the general meeting of shareholders, for up to two additional three year terms, provided that (i) his or her service for each such additional term is recommended by one or more shareholders holding at least 1% of the company's voting rights and is approved at a shareholders meeting by a disinterested majority, where the total number of shares held by non-controlling, disinterested shareholders voting for such reelection exceeds 2% of the aggregate voting rights in the company, provided that the external director and certain of his or her related parties meet additional independence requirements; or (ii) his or her service for each such additional term is recommended by the board of directors and is approved at a meeting of shareholders by the same majority required for the initial election of an external director.

In January 2019, Mr. Zamir and Ms. Yahal were reappointed for a third three-year term as our external directors, each to hold office until January 2022. In accordance with the regulations under the Companies Law (Relief for Public Companies Whose Shares are Listed on a Stock Exchange Outside of Israel, 2000), dual listed companies, like us, whose securities are listed on the NASDAQ Global Select Market or one of a number of other non-Israeli stock exchanges, may re-appoint an external director for additional three-year terms, in excess of the nine years as described above, if the audit committee and the board of directors confirm that, due to the expertise and special contribution of the external director to the work of the board and its committees, his or her re-appointment is in the best interests of the company. The same special majority is required for election of the external director for each additional three-year term.

Each committee of a company's board of directors is required to include at least one external director and the audit committee must include all of the external directors.

An external director is entitled to compensation as provided in regulations promulgated under the Companies Law and is otherwise prohibited from receiving any compensation, directly or indirectly, in connection with services provided as an external director or otherwise to the company.

Following the termination of an external director's service on a board of directors, such former external director and his or her spouse and children may not be provided a direct or indirect benefit by the company, its controlling shareholder or any entity under its controlling shareholder's control, including engagement to serve as an executive officer or director of the company or a company controlled by its controlling shareholder or employment by, or providing services to, any such company for consideration, either directly or indirectly, including through a corporation controlled by the former external director. This restriction extends for a period of two years with regard to the former external director and his or her spouse or child and for one year with respect to other relatives of the former external director.

Under regulations recently promulgated under the Companies Law, Israeli public companies whose shares are traded on certain U.S. stock exchanges, such as the NASDAQ Global Select Market, and that lack a controlling shareholder (as defined below) are exempt from the requirement to appoint external directors. Any such company is also exempt from the Companies Law requirements related to the composition of the audit and compensation committees of the board. Eligibility for these exemptions is conditioned on compliance with U.S. stock exchange listing rules related to majority board independence and the composition of the audit and compensation committees of the board, as applicable to all listed domestic U.S. companies. Because we have a controlling shareholder as determined under the Companies Law (Asseco), we are not eligible for these exemptions under the new regulations.

Qualifications of Directors Generally Under the Companies Law

Under the Companies Law, the board of directors of a publicly traded company is required to make a determination as to the minimum number of directors (not merely external directors) who must have accounting and financial expertise (according to the same criteria described above with respect to external directors under "—External Directors Under the Companies Law"). In accordance with the Companies Law, the determination of the board should be based on, among other things, the type of the company, its size, the volume and complexity of its activities and the number of directors. Based on the foregoing considerations, our board determined that the number of directors with financial and accounting expertise in our company shall not be less than one. As described above under "—External Directors Under the Companies Law," currently Ms. Iris Yahal and Mr. Eli Zamir have been determined by the board to possess such accounting and financial expertise.

Unaffiliated Directors Under the Companies Law

Under the Companies Law, the audit committee of a publicly traded company must consist of a majority of unaffiliated directors. An "unaffiliated director" is defined as an external director or a director who meets the following criteria:

- he or she meets the qualifications for being appointed as an external director, except for (i) the requirement that the director be an Israeli resident (which does not apply to companies whose securities have been offered outside of Israel or are listed outside of Israel) and (ii) the requirement for accounting and financial expertise or professional qualifications; and

- he or she has not served as a director of the company for a period exceeding nine consecutive years. For this purpose, a break of less than two years in the service shall not be deemed to interrupt the continuation of the service.

Our audit committee complies with the foregoing required majority of unaffiliated directors.

Audit Committee

In addition to the foregoing requirement concerning the audit committee's unaffiliated director members, the Companies Law also requires more generally that public companies such as ours must appoint an audit committee, comprised of at least three directors, including all of the external directors, one of whom must serve as chairman of the committee. The chairman of the board of directors, or any director employed by or otherwise providing services on a regular basis to the company or to a controlling shareholder or any entity controlled by a controlling shareholder, may not be a member of the audit committee. Under the Companies Law, our audit committee is responsible for (i) determining whether there are deficiencies in the business management practices of the company, including in consultation with the company's internal auditor or the independent auditor, and making recommendations to the board of directors to improve such practices, (ii) determining whether to approve certain related party transactions, including transactions in which an office holder has a personal interest and whether such transaction is extraordinary or material, (iii) establishing the approval process (including, potentially, the approval of the audit committee) for certain transactions with a controlling shareholder or in which a controlling shareholder has a personal interest, (iv) where the board of directors approves the working plan of the internal auditor, examining such working plan before its submission to the board and propose amendments thereto, (v) examining the company's internal controls and internal auditor's performance, including whether the internal auditor has sufficient resources and tools to dispose of his responsibilities (taking into consideration the company's special needs and size), (vi) examining the scope of the company's auditor's work and compensation and submitting a recommendation with respect thereto to the board of directors or the general meeting of shareholders, depending on which of them is considering the appointment of our auditor and (vii) establishing procedures with respect to the handling of company employees' complaints as to the management of the company's business and the protection to be provided to such employees. In compliance with regulations under the Companies Law, our audit committee also approves our financial statements, thereby fulfilling the requirement that a board committee provide such approval. An audit committee may not approve an action requiring its approval, unless at the time of approval a majority of the committee's members are present, of whom a majority consist of unaffiliated directors and at least one of them is an external director.

The NASDAQ listing rules and U.S. securities laws likewise require that we maintain an audit committee, all of whose members are independent of management. In accordance with the Sarbanes-Oxley Act of 2002 and the NASDAQ requirements, our audit committee's direct responsibilities include the appointment, compensation, retention and oversight of our independent auditors (which itself also requires shareholder ratification under Israeli law). The committee's U.S. and NASDAQ mandated responsibilities also include assisting the board in monitoring our financial statements and the effectiveness of our internal controls. We have adopted a formal audit committee charter that we have implemented, embodying these responsibilities.

Our audit committee consists of our two external directors, Mr. Eli Zamir and Ms. Iris Yahal, as well as Mr. Ohad Melnik (as of January 2019). Each of Mr. Zamir, Ms. Yahal and Mr. Melnik qualifies as an independent director under both the NASDAQ listing rules and Rule 10A-3 of the Exchange Act. The board has furthermore determined that Ms. Yahal is an "audit committee financial expert" as defined by applicable SEC regulations. See "Item 16A. Audit Committee Financial Expert."

Compensation Committee and Compensation Policy

Under the Companies Law, the board of directors of a public company must appoint a compensation committee. The compensation committee must be comprised of at least three directors, including all of the external directors, who must constitute a majority of the members of the compensation committee. Each compensation committee member who is not an external director must be a director whose compensation does not exceed an amount that may be paid to an external director. The compensation committee is subject to the same Companies Law restrictions as the audit committee as to who may not be a member of the compensation committee. As noted above (under "External Directors Under the Companies Law"), Israeli companies whose securities are traded on stock exchanges such as the NASDAQ Global Select Market, and who do not have a controlling shareholder, do not have to meet the compensation committee composition requirements under the Companies Law. Reliance on this leniency is conditioned upon the compensation committee meeting the composition requirements of the jurisdiction where the company's securities are traded. This leniency does not apply to our company, as we have a controlling shareholder (Asseco).

The duties of the compensation committee include the recommendation to the company's board of directors of a policy regarding the terms of engagement of office holders, to which we refer as a compensation policy. That policy must be adopted by the company's board of directors, after considering the recommendations of the compensation committee, and will need to be brought for approval by the company's shareholders, which approval requires what we refer to as a Special Majority Approval for Compensation. A Special Majority Approval for Compensation requires shareholder approval by a majority vote of the shares present and voting at a meeting of shareholders called for such purpose, provided that either:

- such majority includes at least a majority of the shares held by all shareholders who are not controlling shareholders and do not have a conflict of interest (referred to under the Companies Law as a "personal interest") in such compensation arrangement; or
- the total number of shares of non-controlling shareholders who do not have a personal interest in the compensation arrangement and who vote against the arrangement does not exceed 2% of the company's aggregate voting rights.

We initially adopted a compensation policy during 2013. Our compensation policy was not re-approved at our Annual General Meeting of Shareholders that was held on December 21, 2016. In April 2018, in accordance with Section 276A(c) of the Israeli Companies Law 5759-1999, our compensation committee and the board determined that the approval of the compensation policy is in the best interest of the company and exercised their right to adopt the compensation policy notwithstanding it not having been approved by the shareholders at the Annual Meeting. The compensation policy serves as the basis for decisions concerning the financial terms of employment or engagement of office holders, including exculpation, insurance, indemnification or any monetary payment or obligation of payment in respect of employment or engagement. The compensation policy must relate to certain factors, including advancement of the company's objectives, the company's business plan and its long-term strategy, and creation of appropriate incentives for office holders. It must also consider, among other things, the company's risk management, size and the nature of its operations. The compensation policy must furthermore consider the following additional factors:

- the knowledge, skills, expertise and accomplishments of the relevant office holder;
- the office holder's roles and responsibilities and prior compensation agreements with him or her;
- the relationship between the terms offered and the average compensation of the other employees of the company, including those employed through manpower companies;
- the impact of disparities in salary upon work relationships in the company;
- the possibility of reducing variable compensation at the discretion of the board of directors;
- the possibility of setting a limit on the exercise value of non-cash variable equity-based compensation; and
- as to severance compensation, the period of service of the office holder, the terms of his or her compensation during such service period, the company's performance during that period of service, the person's contribution towards the company's achievement of its goals and the maximization of its profits, and the circumstances under which the person is leaving the company.

The compensation policy must also include the following principles:

- the link between variable compensation and long-term performance and measurable criteria;
- the relationship between variable and fixed compensation, and the ceiling for the value of variable compensation;
- the conditions under which an office holder would be required to repay compensation paid to him or her if it was later shown that the data upon which such compensation was based was inaccurate and was required to be restated in the company's financial statements;
- the minimum holding or vesting period for variable, equity-based compensation; and
- maximum limits for severance compensation.

The compensation committee is responsible for (a) recommending the compensation policy to a company's board of directors for its approval (and subsequent approval by its shareholders) and (b) duties related to the compensation policy and to the compensation of a company's office holders as well as functions previously fulfilled by a company's audit committee with respect to matters related to approval of the terms of engagement of office holders, including:

- recommending whether a compensation policy should continue in effect, if the then-current policy has a term of greater than three (3) years (approval of either a new compensation policy or the continuation of an existing compensation policy must in any case occur every three years, or for a new public company, five years initially);
- recommending to the board of directors periodic updates to the compensation policy;
- assessing implementation of the compensation policy; and
- determining whether the compensation terms of the chief executive officer of the company need not be brought to approval of the shareholders.

Our board of directors has adopted a compensation committee charter setting forth the responsibilities of the compensation committee, which include:

- the responsibilities set forth in the compensation policy;
- reviewing and approving the granting of options and other incentive awards to the extent such authority is delegated by our board of directors; and
- reviewing, evaluating and making recommendations regarding the compensation and benefits for our non-employee directors.

Our compensation committee consists of our two external directors, Mr. Eli Zamir and Ms. Iris Yahal, as well as Mr. Ohad Melnik. Each of the members of our compensation committee qualifies as an independent director under the NASDAQ listing rules.

Internal Auditor

Under the Companies Law, the board of directors is required to appoint an internal auditor, nominated by the audit committee. The role of the internal auditor is to examine, among other matters, whether the company's actions comply with the law and orderly business procedure. Under the Companies Law, the internal auditor may be an employee of the company but not an office holder, or an interested party (i.e., a holder of 5% or more of the voting rights in the company or of the issued share capital, the chief executive officer of the company or any of its directors, or a person who has the authority to appoint the company's chief executive officer or any of its directors), or a relative of an office holder or of an interested party. In addition, the company's independent auditor or its representative may not serve as the company's internal auditor. Our internal auditor is Mr. Eyal Weitzman.

NASDAQ Exemptions for a Foreign Private Issuer

We are a foreign private issuer within the meaning of NASDAQ listing rule 5005(a)(18), since we are incorporated in Israel and we meet the other criteria set forth for a "foreign private issuer" under Rule 3b-4(c) under the Exchange Act. Therefore, pursuant to NASDAQ listing rule 5615(a)(3), we may follow home country practice in lieu of certain provisions of the NASDAQ listing rule 5600 series and certain other NASDAQ listing rules. Please see "Item 16G. Corporate Governance" below for a description of the manner in which we rely upon home country practice in lieu of complying with certain NASDAQ listing rules.

Exculpation, Insurance and Indemnification of Directors and Officers

Our office holders consist of the individuals listed in the table under "Directors and Senior Management," which is displayed under "Item 6. Directors, Senior Management and Employees." Under the Companies Law, an Israeli company may not exempt an office holder from liability with respect to a breach of his or her duty of loyalty, but may exempt in advance an office holder from his or her liability to the company, in whole or in part, with respect to a breach of his duty of care, provided, however, that such a breach is not related to a distribution of a dividend or any other distribution by the company.

Office Holders' Insurance. Our articles provide that, subject to the provisions of the Companies Law, we may enter into a contract for the insurance of the liability of any of our office holders imposed on the office holder in respect of an act performed in his or her capacity as an office holder, with respect to:

- a breach of his duty of care to us or to another person;
- a breach of his duty of loyalty to us, provided that the office holder acted in good faith and had reasonable cause to assume that his act would not prejudice our interests; or
- a financial liability imposed upon him in favor of another person.

We have obtained an insurance policy covering the Formula Group's directors' and officers' liability. Certain of our subsidiaries (Magic Software and its subsidiaries, Sapiens and its subsidiaries, Insync, and Michpal and its subsidiary) participate in the premium payments of the insurance, on a proportional basis. The total premium we paid during 2018 was approximately \$190,000.

Indemnification of Office Holders. Our articles provide that we may indemnify an office holder in respect of an obligation or expense imposed on or expended by an office holder in respect of an act performed in his capacity as an office holder as specified below:

- (i) a financial obligation imposed on him in favor of another person by any judgment, including a settlement or an arbitrator's award approved by a court;
- (ii) reasonable litigation expenses, including attorney's fees, expended by the office holder as a result of an investigation or proceeding instituted against him by a competent authority, provided that such investigation or proceeding concluded without the filing of an indictment against him, and either (i) concluded without the imposition of any financial liability in lieu of criminal proceedings; or (ii) concluded with the imposition of a financial liability in lieu of criminal proceedings but relates to a criminal offense that does not require proof of criminal intent;
- (iii) reasonable litigation expenses, including attorneys' fees, expended by the office holder or charged to him by a court, in proceedings instituted against him by another person, or in a criminal charge from which he was acquitted or in any criminal proceedings of a crime which does not require proof of criminal intent;
- (iv) expenses, including reasonable litigation expenses and legal fees, incurred by an office holder as a result of a proceeding instituted against such office holder in relation to (1) infringements that may impose financial sanction pursuant to the provisions of Chapter H'3 under the Israeli Securities Law, which we refer to as the Securities Law, or (2) administrative infringements pursuant to the provisions of Chapter H'4 under the Securities Law or (3) infringements pursuant to the provisions of Chapter I'1 under the Securities Law; and
- (v) payments made by the office holder to an injured party for damages suffered under Section 52(54)(a)(1)(a) of the Securities Law.

We may undertake to indemnify an office holder as aforesaid, (a) prospectively, provided that in respect of (i) above, the undertaking is limited to categories of events that in the opinion of our board of directors are foreseeable in light of our actual operations at the time that the undertaking to indemnify is given, and to the amounts or criteria that our board of directors deems reasonable under the circumstances, and further provided that such events and amount or criteria are set forth in the undertaking to indemnify, but in any event no more than 25% of Formula's shareholders equity according to its most recent financial statements as of the date of the actual payment of indemnification; and (b) retroactively.

Limitations on Exemption, Insurance and Indemnification. The Companies Law provides that a company may not indemnify an office holder, enter into an insurance contract which would provide coverage for any monetary liability, or exempt an office holder from liability, with respect to any of the following:

- a breach by the office holder of his duty of loyalty unless the office holder acted in good faith and had a reasonable basis to believe that the act would not prejudice the company;
- a breach by the office holder of his duty of care if the breach was done intentionally or recklessly, except for a breach that was made in negligence;
- any act or omission done with the intent to derive an illegal personal benefit;
- any fine levied against the office holder; or
- a counterclaim made by the company or in its name in connection with a claim against the company filed by the office holder.

In addition, under the Companies Law, indemnification of, and procurement of insurance coverage for, our office holders must be approved by our audit committee and our board of directors and, in specified circumstances, by our shareholders.

We have entered into undertakings to indemnify our office holders in specified limited categories of events and in specified amounts, subject to the limitations set by the Companies Law and our articles, as described above. For more information, see "Item 7.B. Related Party Transactions – Indemnification of Office Holders."

Directors' Severance Benefits Upon Termination of Employment

We have not entered into any service contracts with any members of our board of directors that provide for specific benefits upon termination of employment, as none of our directors is employed by us or otherwise subject to a consulting or similar contract with us that provides benefits upon termination of employment or service. The only severance pay benefits that we provide are provided to employees as required under Israeli law and are described below in the section titled "Employees".

D. Employees

The table below sets forth the average number of employees employed by us, as allocated among our six subsidiaries in which we have effective control through December 31, 2018, during each of the last three fiscal years:

	Year ended December 31,		
	2016	2017	2018
Matrix	8,250	8,630	9,252
Magic Software	1,699	2,052	2,226
Sapiens	1,928	2,376	2,378
TSG	375	375	403
Michpal	-	47	67
Insync	1,320	997	775
Total	13,572	14,477	15,101

The table below sets forth the average number of employees employed by us, as allocated by geographical area of employment, during each of the last three fiscal years:

	Year ended December 31,		
	2016	2017	2018
Israel	9,608	10,032	10,399
United States and Canada	2,548	2,913	2,822
Europe	838	771	705
Asia	568	733	1,161
South Africa	10	28	14
Total	13,572	14,477	15,101

With respect to our employees in Israel, we are subject to various Israeli labor laws and labor practices, and to administrative orders extending certain provisions of collective bargaining agreements between the Histadrut (Israel's General Federation of Labor) and the Coordinating Bureau of Economic Organizations (the Israeli federation of employers' organizations) to all private sector employees. For example, mandatory cost of living adjustments, which compensate Israeli employees for a portion of the increase in the Israeli consumer price index, are determined, from time to time, on a nationwide basis. Israeli law also requires the payment of severance benefits upon the termination, retirement (in some instances) or death of an employee. We meet this requirement by (i) contributing on an ongoing basis towards "managers' insurance" funds that combine pension, insurance and, if applicable, severance pay benefits and (ii) payment of differences, if applicable. In addition, Israeli employers and employees are required to pay specified percentages of wages to the National Insurance Institute. Other provisions of Israeli law or regulation govern matters such as the length of the workday, minimum wages, other terms of employment and restrictions on discrimination.

We are also subject to the labor laws and regulations of other jurisdictions in the world where we have employees.

E. Share Ownership

As of March 31, 2019, none of our directors or officers owned any shares of our company (whether actual ordinary shares or shares issuable upon exercise of options), except for Mr. Guy Bernstein, our Chief Executive Officer, Mr. Asaf Berenstin, our Chief Financial Officer and Ms. Maya Solomon, our Chief Operational Manager, as described under "Item 6. Directors, Senior Management & Employees— B. Compensation— Option Grants to, and Service Agreement with, Chief Executive Officer" and "Item 6. Directors, Senior Management & Employees— Restricted Share Grants to Chief Financial Officer" above. None of the ordinary shares beneficially owned by Messrs. Bernstein and Berenstin has voting rights different from those possessed by other holders of Formula's ordinary shares.

At the current time, based on information that he has provided to us, Mr. Guy Bernstein beneficially owns 1,971,973 of Formula's ordinary shares, in the aggregate. Please see "Item 7. Major Shareholders and Related Party Transactions—A. Major Shareholders" below for more information.

At the current time, based on information that he has provided to us, Mr. Asaf Berenstin owns 20,000 of Formula's ordinary shares, which were granted to him on November 13, 2014 and on August 17, 2017 (as described above under "Item 6. Directors, Senior Management and Employees— B. Compensation— Restricted Share Grants to Chief Financial Officer" and in Note 17(b) to our consolidated financial statements contained elsewhere in this annual report). Of those shares, as of March 31, 2019, 15,000 are vested and the remainder are subject to restrictions.

At the current time, based on information that she has provided to us, Ms. Maya Solomon owns 10,000 of Formula's ordinary shares, which were granted to her on November 19, 2018 (as described above under "Item 6. Directors, Senior Management and Employees— B. Compensation— Restricted Share Grants to Chief Operational Officer" and in Note 17(b) to our consolidated financial statements contained elsewhere in this annual report). Of those shares, as of March 31, 2019, none are vested.

Arrangements Involving the Issuance or Grant of Equity Awards

Formula's 2008 Share Option Plan

In March 2008, our shareholders approved the adoption of Formula's 2008 Employee and Office Holders Share Option Plan, which we refer to as the 2008 Plan. Pursuant to the 2008 Plan, we may grant from time to time to our and our subsidiaries' employees and office holders (which are not Formula's controlling shareholders) options to purchase up to 400,000 ordinary shares of Formula. The 2008 Plan is administered by our board of directors. The 2008 Plan provides that options may be granted, from time to time, to such grantees to be determined by our board of directors, at such exercise prices and under such terms as shall be determined by the board at its sole and absolute discretion. Options may be granted under the 2008 Plan through January 2018.

Of the options available for grant under the 2008 Plan, we granted, in January 2009, options to purchase 396,000 ordinary shares to our Chief Executive Officer, each exercisable at an exercise price of NIS 0.01. (Please see "Item 6. Directors, Senior Management and Employees— B. Compensation— Option Grants to, and Service Agreement with, Chief Executive Officer" for a description of that grant.) As of April 30, 2018, there are no available shares for future grants under the 2008 Plan.

Formula's 2011 Share Incentive Plan

In March 2011, our board of directors adopted Formula's 2011 Share Incentive Plan, which we refer to as the 2011 Plan. Pursuant to the 2011 Plan, we may grant from time to time to our and our subsidiaries' employees, office holders (which are not Formula's controlling shareholders) and consultants options to purchase, share based awards or restricted shares with respect to, up to an aggregate of 545,000 ordinary shares of Formula. The 2011 Plan is administered by our board of directors. The 2011 Plan provides that options, restricted shares or other stock-based awards may be granted, from time to time, to such grantees to be determined by our board of directors, at such exercise prices and with such vesting or other terms as shall be determined by the board at its sole and absolute discretion. Options may be granted under the 2011 Plan through March 2021.

In March 2012, our board of directors increased the amount of ordinary shares reserved for issuance under the 2011 Share Incentive Plan by 1,200,000 shares.

Of the options available for grant under the 2011 Plan, we approved the grant, in March 2011, of options to purchase 543,840 ordinary shares to our Chief Executive Officer, each to be exercisable for no consideration and, in March 2012, we approved the grant of options to purchase 1,122,782 ordinary shares to our Chief Executive Officer, each to be exercisable for NIS 0.01 per share. Please see "Item 6. Directors, Senior Management and Employees— B. Compensation— Option Grants to, and Service Agreement with, Chief Executive Officer" for a description of those grants. We have also approved the grant of 10,000 restricted shares to our Chief Financial Officer on each of November 13, 2014 and August 17, 2017 and the grant of 10,000 restricted shares to our Chief Operational Officer on November 19, 2017, in each case under the 2011 Plan. Please see "Item 6. Directors, Senior Management and Employees— B. Compensation— Restricted Share Grants to Chief Financial Officer" for a description of those grants.

As of March 31, 2019, 48,378 ordinary shares remain available for future grants under the 2011 Plan.

Equity Incentive Plans of Our Subsidiaries

Our subsidiaries generally have equity incentive plans pursuant to which qualified directors, employees and consultants may be granted options or other share-based awards consisting of securities of the subsidiaries.

ITEM 7. MAJOR SHAREHOLDERS AND RELATED PARTY TRANSACTIONS

A. Major Shareholders

The following table presents information regarding the beneficial ownership (as defined in Form 20-F promulgated by the SEC) of Formula's ordinary shares (including shares represented by ADSs) as of March 31, 2019 by each person known to us to be the beneficial owner of 5% or more of Formula's ordinary shares, and by our directors and executive officers as a group, based on information provided to us by our shareholders or disclosed in public filings with the SEC. None of the holders of the ordinary shares listed in the below table has voting rights different from other holders of Formula's ordinary shares. Except where indicated otherwise, we believe, based on information furnished by these owners, that each of the beneficial owners of Formula's ordinary shares listed below has sole investment and voting power with respect to such shares.

Name	Number of Ordinary Shares Beneficially Owned ⁽¹⁾	Percentage of Ownership ⁽²⁾
Asseco Poland S.A. ⁽³⁾	5,849,819	38.3%
Guy Bernstein ⁽⁴⁾	1,971,973	12.9%
Menora Mivtachim Holdings Ltd. ⁽⁵⁾	1,022,196	6.7%
Clal Insurance Enterprises Holdings Ltd. and affiliates ⁽⁶⁾	1,274,051	8.3%
Meitav Dash Investments Ltd. ⁽⁷⁾	823,907	5.4%
Yelin Lapidot Holdings Management Ltd. ⁽⁸⁾	850,642	5.6%
Phoenix Holdings Ltd. ⁽⁹⁾	879,252	5.7%
Harel Insurance Investments & Financial Services Ltd. ⁽¹⁰⁾	763,322	5.0%
All directors and executive officers as a group (8 persons) ⁽¹¹⁾	1,986,973	13.0%

- (1) Beneficial ownership is determined in accordance with the rules of the Securities and Exchange Commission, or the SEC, and generally includes voting or investment power with respect to securities. Ordinary shares underlying options currently exercisable or exercisable within 60 days of the date of this table are deemed outstanding for computing the ownership percentage of the person holding such options but are not deemed outstanding for computing the ownership percentage of any other person. Except as indicated by footnote, and subject to community property laws where applicable, the persons named in the table above have sole voting and investment power with respect to all shares shown as beneficially owned by them.
- (2) The percentages shown are based on 15,294,267 ordinary shares (including shares represented by ADSs, and shares subject to restrictions and repurchase by us) issued and outstanding as of March 31, 2019.
- (3) Based on Amendment No. 3 to Schedule 13D filed by Asseco Poland S.A., or Asseco, with the SEC on October 19, 2017. Includes 1,971,973 ordinary shares owned by Mr. Guy Bernstein, with respect to which Asseco currently possesses the voting rights pursuant to a voting agreement between Asseco and Mr. Bernstein. Due to the public ownership of its shares, Asseco is not controlled by any other corporation or any one individual or group of shareholders.
- (4) Based on Amendment No. 2 to Schedule 13D filed by Mr. Bernstein with the SEC on October 19, 2017. Consists of (a) (i) 260,040 ordinary shares, and (ii) an additional 1,122,782 ordinary shares, all of which are held in trust for Mr. Bernstein, and (b) an additional 589,151 ordinary shares, of which (iii) 298,942 are held by Mr. Bernstein and (iv) 290,209 are held in trust for Mr. Bernstein. Asseco currently possesses the voting rights to all such shares pursuant to a voting agreement between Asseco and Mr. Bernstein.
- (5) Based on Amendment No. 5 to Schedule 13G filed by Menora Mivtachim Holdings Ltd., or Menora Holdings, on February 11, 2019. Such ordinary shares are beneficially owned by Menora Holdings and by entities that are direct or indirect, wholly-owned or majority-owned, subsidiaries of Menora Holdings, as follows: Menora Mivtachim Pensions and Gemel Ltd. (816,611 ordinary shares); Menora Mivtachim Insurance Ltd. (185,407 ordinary shares); Menora Mivtachim Vehistadrut Hamehadesim Nihul Kupot Gemel Ltd. (18,347 ordinary shares); and Shomera Insurance Company Ltd. (1,831 ordinary shares). The economic interest or beneficial ownership in a portion of the foregoing ordinary shares (including the right to receive or the power to direct the receipt of dividends from, or the proceeds from the sale of, such shares) is held for the benefit of insurance policy holders, the owners of portfolio accounts, or the members of the mutual funds, provident funds, or pension funds, as the case may be.
- (6) Based on Amendment No. 2 to Schedule 13G filed by Clal Insurance Enterprises Holdings Ltd., or Clal, on February 14, 2019, as well as a Schedule 13G filed by IDB Development Corporation Ltd., or IDB, on February 14, 2019. Clal is a publicly-held Israeli corporation. The majority outstanding shares of Clal are held by a trustee appointed by the Israeli Supervisor of Capital Markets, Insurance and Savings on behalf of IDB, pending IDB's sale of its controlling interest in Clal. The ordinary shares reported as beneficially owned consist of (i) 1,273,784 ordinary shares held directly by Clal, and (ii) 267 ordinary shares held directly by Epsilon Investment House Ltd., or Epsilon, an indirect subsidiary of Discount Investment Corporation Ltd., or Discount, an Israeli public corporation. Mr. Eduardo Sergio Elsztain holds indirectly 78.2% of Discount and 100% of IDB. The ordinary shares held by Clal are held for members of the public through, among others, provident funds and/or pension funds and/or insurance policies, which are managed by subsidiaries of Clal, which subsidiaries operate under independent management and make independent voting and investment decisions.

- (7) Based on Amendment No. 3 to Schedule 13G filed by Meitav Dash Investments Ltd., or Meitav Dash, on February 7, 2019. The ordinary shares beneficially owned by Meitav Dash are beneficially owned by various direct or indirect, majority or wholly-owned subsidiaries of Meitav Dash. Some of the ordinary shares are held by third-party client accounts managed by a subsidiary of Meitav Dash as portfolio managers, which subsidiary operates under independent management and makes independent investment decisions and has no voting power in the securities held in such client accounts. The subsidiaries of Meitav Dash manage their own funds and/or the funds of others, including for holders of exchange-traded notes or members of pension or provident funds, unit holders of mutual funds, and portfolio management clients. Each of the subsidiaries operates under independent management and makes its own independent voting and investment decisions. The ordinary shares reported as beneficially owned consist of: (i) 254,665 ordinary shares held by Meitav Dash Mutual Funds Ltd and Tachlit Indices Mutual Fund Management Ltd.; (ii) 538,540 ordinary shares held by Meitav Dash Provident Funds and Pension Ltd.; and (iii) 30,702 ordinary shares held by Meitav Dash Portfolio Management Ltd.
- (8) Based on a beneficial ownership report on Schedule 13G filed by Yelin Lapidot Holdings Management Ltd., or Yelin, with the SEC on March 18, 2019. 578,412 of the ordinary shares beneficially owned by Yelin are held by provident funds managed by Yelin Lapidot Provident Funds Management Ltd., or Yelin Provident, and 272,230 of the ordinary shares beneficially owned by Yelin are held by mutual funds managed by Yelin Lapidot Mutual Funds Management Ltd., or Yelin Mutual. Each of Yelin Provident and Yelin Mutual is a wholly-owned subsidiary of Yelin. Messrs. Dov Yelin and Yair Lapidot each own 24.38% of the share capital and 25% of the voting rights of Yelin, and are responsible for the day-to-day management of Yelin. The ordinary shares beneficially owned are held for the benefit of the members of the provident funds and the mutual funds. Each of Yelin, Yelin Provident, Yelin Mutual and Messrs. Yelin and Lapidot disclaims beneficial ownership of the subject ordinary shares.
- (9) Based on a beneficial ownership report on Schedule 13G filed by Phoenix Holdings Ltd. on February 14, 2019. The ordinary shares held by Phoenix Holdings are beneficially owned by various direct or indirect, majority or wholly-owned subsidiaries of Phoenix Holdings, or the Phoenix Subsidiaries. The Phoenix Subsidiaries manage their own funds and/or the funds of others, including for holders of exchange-traded notes or various insurance policies, members of pension or provident funds, unit holders of mutual funds, and portfolio management clients. Each of the Phoenix Subsidiaries operates under independent management and makes its own independent voting and investment decisions. Phoenix Holdings is a controlled subsidiary of Delek Group Ltd. The majority of Delek Group Ltd.'s outstanding share capital and voting rights are owned, directly and indirectly, by Itshak Sharon (Tshuva) through private companies wholly-owned by him, and the remainder are held by the public.
- (10) Based on a beneficial ownership report on Schedule 13G filed by Harel Insurance Investments & Financial Services Ltd., or Harel, an Israeli public company, on January 29, 2019. Of the 763,322 ordinary shares reported as beneficially owned by Harel: (i) 700,259 are held for members of the public through, among others, provident funds and/or mutual funds and/or pension funds and/or insurance policies and/or exchange traded funds, which are managed by subsidiaries of Harel, each of which operates under independent management and makes independent voting and investment decisions; (ii) 60 are held by third-party client accounts managed by subsidiaries of Harel as portfolio managers, each of which subsidiaries operates under independent management and makes independent investment decisions and has no voting power with respect to the shares held in those client accounts, and (iii) 63,003 ordinary shares are beneficially held for its own account. Harel does not admit that it is the beneficial owner of more than the foregoing 63,003 ordinary shares.
- (11) Includes the shares described in note (4) above, 15,000 vested restricted shares granted to Asaf Berenstin, the Company's Chief Financial Officer, on November 13, 2014 and on August 17, 2017 under the Company's 2011 Plan. An additional 5,000 restricted shares remain subject to restriction. Besides Mr. Bernstein, Mr. Berenstin and Ms. Solomon (who was granted 10,000 restricted shares in November 2018, none of which are vested), none of our other directors or executive officers beneficially owns any ordinary shares (whether actual ordinary shares or shares issuable upon exercise of options).

Recent Significant Changes in Holdings of Major Shareholders

On August 3, 2017 Asseco, then holding 6,823,602 ordinary shares, representing 46.3% of our outstanding share capital as of December 31, 2018, sold 2,356,605 ordinary shares, representing 16% of our outstanding share capital as of that December 31, 2018, to eleven Israeli financial institutions, in privately negotiated sales transactions. The purchase price in that transaction was NIS 124.14 per share (or \$34.59 per share, based on the representative exchange rate of NIS 3.589 = US \$1.00 reported by the Bank of Israel as of August 3, 2017).

On August 22, 2017, Asseco sold an additional 589,151 of our ordinary shares, representing 4% of our outstanding share capital as of December 31, 2018, to Mr. Bernstein, our Chief Executive Officer for the same price per share. As a result of these transactions, Asseco's ownership of our outstanding share capital was reduced to 26.3% or 25.4% as of December 31, 2018 and March 31, 2019, respectively.

On October 4, 2017, Asseco entered into a shareholders agreement with our Chief Executive Officer, under which Asseco has been granted an irrevocable proxy to vote an additional 1,971,973 of our ordinary shares, thereby effectively giving Asseco beneficial ownership (voting power) over an aggregate of 39.7% or 38.3% of our outstanding ordinary shares as of December 31, 2018 and March 31, 2019, respectively. That percentage is calculated based on 14,750,338 or 15,294,267 outstanding ordinary shares as of December 31, 2018 and March 31, 2019, respectively, which excludes (i) 24,780 ordinary shares that we repurchased during 2002 and 543,840 that we repurchased during 2011, which lack voting rights, and (ii) shares subject to restrictions, which are voted in proportion to the votes of our other shares.

As of March 31, 2019, we had two shareholders of record, one of which was a United States record holder. The number of record holders is not representative of the number of beneficial holders of our ordinary shares, as the shares of all shareholders (including shares represented by ADSs) are recorded in the name of our Israeli share registrar, Israel Discount Bank Limited's registrar company. All of our ordinary shares (including shares represented by ADSs) have equal voting rights. However, under applicable Israeli law, the shares that we have repurchased and currently hold have no voting rights and, therefore, are excluded from the number of our outstanding shares.

As of March 31, 2019, 144,666 ADSs were issued and outstanding pursuant to a depositary agreement with The Bank of New York Mellon, representing approximately 1.0% of our outstanding ordinary shares. As of that date, there were approximately 13 registered holders of our ADSs, of whom approximately 10 record holders were United States residents. Such number of record holders is not representative of the actual number of beneficial holders of our ADSs in the United States.

We are unaware of any arrangements which may at a subsequent date result in a change in control of Formula.

B. Related Party Transactions

Indemnification of Office Holders

We have undertaken to indemnify each of our office holders. Our office holders' indemnification letters provide, among other things, that we will indemnify each of our office holders to the maximum extent permitted by our articles. Advance payments for coverage of legal expenses in criminal proceedings will be required to be repaid by an office holder to the company if such office holder is found guilty of a crime which requires proof of criminal intent, or if it is determined that the office holder is not lawfully entitled to such indemnification.

All of the indemnification letters granted to our office holders are identical, including indemnification letters granted to office holders who are or may be considered "controlling persons" under the Companies Law.

The indemnification is limited to the expenses and matters detailed in the indemnification letters insofar as they result from an office holder's actions in connection with, among other things, the following matters: the offering of securities by us to the public or to private investors; the offer by us to purchase securities from the public, private investors or other holders, whether pursuant to a prospectus, agreement, notice, report, tender or any other proceeding; our labor relations and/or employment matters and our trade relations; the development or testing of products developed by us, or the distribution, sale, license or use of such products; and occurrences in connection with investments made by us.

Our undertaking for indemnification is limited to up to 25% of our shareholders' equity as it appears in our latest financial statements known at the date of indemnification, calculated with respect to each director and officer of Formula.

Our undertaking for indemnification does not apply to a liability incurred as a result of any of the following:

- (i) a breach by an office holder of his or her fiduciary duty, except, to the extent permitted by law, for a breach while acting in good faith and having reasonable cause to assume that the action was in our best interest;
- (ii) a grossly negligent or intentional violation of the office holder's duty of care;
- (iii) an intentional action in which the office holder intended to reap a personal gain illegally;
- (iv) a fine, civil fine or financial sanction levied against and/or imposed upon the office holder;
- (v) a proceeding instituted against the office holder pursuant to the provisions of Chapter H'3, H'4 or I'1 under the Securities Law, except as otherwise permitted in the undertaking; or
- (vi) a counterclaim brought by us or in our name in connection with a claim against us filed by the office holder, other than by way of defense or by way of third party notice in connection with a claim brought against the office holder by us, or in specific cases in which our board of directors has approved the initiation or bringing of such suit by the office holder, which approval shall not be unreasonably withheld.

We are not required to indemnify an office holder if the office holder, or anyone on his or her behalf, already received payment in respect of a liability subject to indemnification, under an effective insurance coverage or an effective indemnification arrangement with a third party. However, if that payment made to the office holder does not cover the entire liability subject to the indemnification, we will indemnify the office holder in respect of the difference between the amount paid to the office holder and the liability subject to the indemnification.

Office Holders' Insurance

In April and May 2018, our compensation committee and board of directors, followed by our shareholders, approved our obtaining one or more renewals of our directors and officers (D&O) liability insurance, reflecting certain increases in coverage, for a period of up to three years.

The renewed insurance coverage, as so approved, is subject to the following terms: (i) the coverage will be no less than \$10 million, both per claim and in the aggregate; (ii) the annual premium to be paid by our company and its subsidiaries will not exceed an amount representing an increase of 20% or more in any year, as compared to the previous year, and in any event no more than \$400,000 per year; and (iii) any renewal, extension or substitution will be for the benefit of our company's and its subsidiaries' officers and directors and will otherwise be on terms substantially similar to or better (from the perspective of the directors and officers) than those of the then-effective insurance policy.

Pursuant to the foregoing approval, we have obtained an insurance policy covering the Formula Group's D&O liability. Our subsidiaries participate in the premium payments of the insurance policy, on a proportional basis. The current coverage of that policy is up to a maximum of \$40.0 million both per incident and in the aggregate, plus \$10.0 million of Side A DIC coverage. The total premium that we paid for that coverage during 2018 was approximately \$190,000.

Service Agreement with our Chief Executive Officer

We are party to a written service agreement with our Chief Executive Officer, Mr. Guy Bernstein, which was entered into in December 2008 and was amended in March 2011 and in March 2012 and which has a term of 84 months from the date of such last amendment. This agreement provides for early termination by either side upon 180 days advance written notice, during which time the Chief Executive Officer will continue to receive service fees. This agreement furthermore contains customary provisions regarding nondisclosure, confidentiality of information and assignment of inventions.

Option Agreement with our Chief Executive Officer

For a description of the option agreement with our Chief Executive Officer, please see "Item 6.B. Compensation – Option Grants to, and Service Agreement with, Chief Executive Officer."

Services Obtained from Asseco

During 2018, Asseco provided back-office services, professional services and fixed assets to Sapiens' wholly-owned subsidiary, Sapiens Poland, in an amount totaling approximately \$1 million. In September 2018, Sapiens Poland vacated one of the Asseco offices in Poland. This will reduce the back-office fee that Sapiens Poland will pay to Asseco in 2019.

Services Provided to Asseco

During 2018, Sapiens Poland performed services as a sub-contractor on behalf of Asseco for clients of Asseco in a total amount of approximately \$3.2 million. For historic reasons, Asseco issues invoices to those clients and then Sapiens in turn invoices Asseco on a back-to-back basis (with no margin to Asseco).

Fees Paid for Board Services in Affiliates

Sapiens paid us approximately \$28,600 and \$25,000 in respect of their share of the director's fees of Guy Bernstein, their Chairman, for the year ended December 31, 2017 and 2018 respectively.

Matrix paid us approximately \$30,000 and \$29,000 in respect of their share of the director's fees of Guy Bernstein, their Chairman, for the year ended December 31, 2017 and 2018, respectively.

Mr. Bernstein serves as the Chief Executive Officer of Formula.

Other Transactions

As of December 31, 2018, the Group had trade receivables balances due from its related parties in an amount of approximately \$1.0 million.

From time to time, in our ordinary course of business, we engage in non-material transactions with our subsidiaries and affiliates where the amount involved in, and the nature of, the transactions are not material to any party to the transaction. We believe that these transactions are made on an arms' length basis upon terms and conditions no less favorable to us, our subsidiaries and affiliates, as we could obtain from unaffiliated third parties. If we engage with our subsidiaries and affiliates in transactions which are not in the ordinary course of business, we receive the approvals required under the Companies Law. These approvals include audit committee approval, board approval and, in certain circumstances, shareholder approval. See "Item 6.C. Board Practices."

C. Interests of Experts and Counsel

Not applicable.

ITEM 8. FINANCIAL INFORMATION

A. Consolidated Statements and Other Financial Information

Financial Statements

Our consolidated financial statements and other financial information are incorporated herein by reference to "Item 18. Financial Statements" below.

Export Sales

In 2018, 40% of our revenues originated from customers located outside of Israel. For information on our revenues breakdown by geographic market for the past three years, see "Item 4.—Information on the Company—Business Overview—Geographical Distribution of Revenues."

Legal Proceedings

From time to time, we are subject to legal, administrative and regulatory proceedings, claims, demands and investigations in the ordinary course of business, including claims with respect to intellectual property, contracts, employment and other matters. In accordance with IFRS, we accrue a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Significant judgment is required in the determination of both the probability and as to whether a loss is reasonably estimable. These accruals are reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular matter. We intend to vigorously defend ourselves against the above claims, and we generally intend to vigorously defend any other legal claims to which we are subject. While for most litigation, the outcome is difficult to determine, to the extent that there is a reasonable possibility that the losses to which we may be subject could exceed the amounts (if any) that it has already accrued, we attempt to estimate such additional loss, if reasonably possible, and disclose it (or, if it is an immaterial amount, indicate accordingly). The aggregate provision that we have recorded for all other legal proceedings (other than the particular material proceeding described below) is not material. Furthermore, in respect of our ordinary course legal, administrative and regulatory proceedings (i.e., other than the particular material proceeding described below), we estimate, in accordance with the procedures described above, that as of the current time there is no reasonable possibility that we will incur material losses exceeding the non-material amounts already recognized.

Legal Proceedings related to Magic Software:

Disputes with Software Company

In September 2016, an Israeli software company, which was previously involved in an arbitration proceeding with Magic Software and one of its subsidiaries in 2015 and won damages from Magic Software for \$2.4 million, filed a lawsuit seeking damages of NIS 34.1 million from Magic Software and one of its subsidiaries. This lawsuit was filed as part of an arbitration proceeding. In the lawsuit, the software company claimed that warning letters that Magic Software sent to its clients in Israel and abroad, warning those clients against the possibility that the conversion procedure offered by the software company may amount to an infringement of our copyrights (which we refer to as the Warning Letters), as well as other alleged actions, have caused the software company damages resulting from loss of potential business. The lawsuit is based on rulings given in the 2015 arbitration proceeding in which it was allegedly ruled that the Warning Letters constituted a breach of a non-disclosure agreement (NDA) signed between the parties.

Magic Software rejected the claims by the Israeli software company and moved to dismiss the lawsuit entirely. In view of the nature of the claims—both factual and legal—that were raised in the proceedings, the likelihood of an expert-based ruling and the fact that at this point, all of the relevant motions have been filed and all witnesses deposed, it is impossible to properly evaluate whether the lawsuit will be successful, and we are therefore unable to make a reasonably reliable estimate of our chances of successfully defending this lawsuit.

Collection Proceeding Against Customer

In February 2018, Comm-IT Ltd., a subsidiary of Magic Software, commenced an action against one of its customers for payment of an overdue amount in the Supreme Court of the State of New York, New York County. In April 2018, the customer filed an answer in the action that included counterclaims asserting causes of action for breach of contract, fraud, and trespass to chattel. In May 2018, Comm-IT filed a reply to the counterclaims. The parties agreed to participate in a mediation before a neutral mediator in March 2019. While it appears that the allegations against Comm-IT probably do not have merit, it is difficult to predict at this point whether Comm-IT's potential liability is remote or probable.

We are not involved in any proceedings in which any of our directors, members of our senior management or any of our affiliates is either a party adverse to us or to our subsidiaries, or has a material interest adverse to us or to our subsidiaries. Other than the above described proceedings, we are also not involved in any proceedings which may have, or have had in the recent past, significant effects on our financial position or profitability.

Dividend Policy

Formula

Under Formula's dividend policy adopted by our board of directors, sums that are not planned to be used for investments in the near future may be distributed to its shareholders as a cash dividend, to the extent that our performance allows such distribution. In the three most recent fiscal years, Formula has made the following distributions:

In December 2018, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in January 2019. The aggregate amount distributed by Formula was approximately \$5.0 million.

In September 2017, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in November 2017. The aggregate amount distributed by Formula was approximately \$5.0 million.

In December 2016, Formula declared a cash dividend to its shareholders of \$0.48 per share, which was paid in January 2017. The aggregate amount distributed by Formula was approximately \$7.1 million.

In June 2016, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in July 2016. The aggregate amount distributed by Formula was approximately \$5.0 million.

In January 2016, Formula declared a cash dividend to its shareholders of \$0.34 per share, which was paid in February 2016. The aggregate amount distributed by Formula was approximately \$5.0 million.

Magic Software

In September 2012, Magic Software's board of directors also adopted a policy for distributing dividends, under which Magic Software will distribute a dividend of up to 50% of its annual distributable profits each year, subject to any applicable law. It is possible that Magic Software's board of directors will decide, subject to the conditions stated above, to declare additional dividend distributions. Magic Software's board of directors may at its discretion and at any time, change, whether as a result of a one-time decision or a change in policy, the rate of dividend distributions or determine not to distribute a dividend.

On August 9, 2017 Magic Software's board of directors amended Magic Software's dividend policy under which Magic Software will distribute a dividend of up to 75% of its annual distributable profits each year, subject to any applicable law.

Matrix

In August 2010, Matrix's board of directors decided to change Matrix's dividend distribution policy, whereby in every year, Matrix will distribute a dividend at a rate of 75% (instead of 50% before) of its annual net income. The dividend is to be distributed on a quarterly basis.

Under Israeli law, dividends may be paid by an Israeli company only out of profits and other surplus as calculated under Israeli law, as of the end date of the most recent financial statements or as accrued over a period of two years, whichever amount is greater, and provided that there is no reasonable concern that payment of a dividend will prevent the company from satisfying its existing and foreseeable obligations as they become due. See "Item 10. Additional Information—Memorandum and Articles of Association—Dividend and Liquidation Rights" below for more information.

B. Significant Changes

Since the date of our consolidated financial statements included in this annual report, there has not been a significant change in our company.

ITEM 9. THE OFFER AND LISTING

A. Offer and Listing Details

Our ordinary shares have been trading on the TASE under the symbol "FORT" since our initial public offering in 1991.

Our ADSs are listed on the NASDAQ Global Select Market since October 1997 under the symbol "FORTY." Each ADS represents one ordinary share.

For a description of the ADSs, see "Item 12. Description of Securities Other Than Equity Securities—D. American Depositary Shares."

B. Plan of Distribution

Not applicable.

C. Markets

Since our initial public offering in 1991, our ordinary shares have been traded in Israel on the TASE under the symbol "FORT." No U.S. trading market exists for the ordinary shares. Since October 1997, our ADSs have been traded on the NASDAQ Global Select Market, under the symbol "FORTY." Each ADS represents one ordinary share and is evidenced by an American depositary receipt, or ADR. The ADRs were issued pursuant to a Depositary Agreement entered into with the Bank of New York Mellon.

D. Selling Shareholders

Not applicable.

E. Dilution

Not applicable.

F. Expenses of the Issue

Not applicable.

ITEM 10. ADDITIONAL INFORMATION

A. Share Capital

Not applicable.

B. Memorandum and Articles of Association

We are registered with the Israeli Companies Registrar under the number 52-003669-0. Our objects are specified in our memorandum of association. These objects include:

- operating within the field of informational and computer systems;
- providing management, consulting and sale services for computers, computer equipment, software for computers and for information systems;
- operating a business of systems analysis, systems programming and computer programming; and
- establishing facilities for instruction and training for computers and digital systems.

Description of Our Share Capital

Our company's authorized share capital consists solely of ordinary shares. No preferred shares are currently authorized. Our articles do not restrict in any way the ownership of our ordinary shares by non-residents of Israel, except that these restrictions may exist with respect to citizens of countries which are in a state of war with Israel.

Dividend and Liquidation Rights

Our board of directors is authorized to declare dividends, subject to the provisions of the Companies Law. Dividends on our ordinary shares may be paid only out of profits and other surplus, as defined in the Companies Law, as of the end date of the most recent financial statements or as accrued over a period of two years, whichever amount is greater. Alternatively, if we do not have sufficient profits or other surplus, we may seek permission to effect a distribution by order of an Israeli court. In any event, our board of directors is authorized to declare dividends, provided there is no reasonable concern that a dividend will prevent us from satisfying our existing and foreseeable obligations as they become due. Dividends may be paid in cash or in kind. We may invest or use for our own benefit all unclaimed dividends. If a dividend remains unclaimed for seven years from the date on which we declared it, it lapses and reverts back to us. Our board of directors can nevertheless cause us to pay the dividend to a holder who would have been entitled had the dividend not reverted back to us. In case of the liquidation of our company, after satisfying liabilities to creditors, our assets will be distributed to the holders of ordinary shares in proportion to their holdings. This right may be affected by the grant of a preferential dividend or distribution rights to the holders of a class of shares with preferential rights that may be authorized in the future. Under the Companies Law, the declaration of a dividend does not require the approval of the shareholders of the company, unless the company's articles of association require otherwise. Our articles provide that our board of directors may declare and pay dividends without any action required by our shareholders.

Redemption Provisions

In accordance with our articles, we may issue redeemable shares and accordingly redeem those shares.

Voting, Shareholder Meetings and Resolutions

Holders of our ordinary shares are entitled to one vote for each ordinary share held on all matters submitted to the vote of shareholders. These voting rights may be affected by the grant of any special voting rights to the holders of a class of shares with preferential rights that may be authorized in the future. Under the Companies Law, shares held by our company are not entitled to any rights so long as they are held by the company.

Under the Companies Law and our articles, we must hold an annual general meeting of our shareholders once a year with a maximum period of fifteen months between the meetings, while under NASDAQ listing rule 5620(a), we must hold the meeting within one year after our fiscal year-end (which is December 31st). All meetings of shareholders other than annual general meetings are considered special general meetings. Our board of directors may call a special general meeting whenever it decides it is appropriate. In addition, shareholders representing 5% of the outstanding share capital may require the board of directors to call a special general meeting. Under our articles, the quorum required for a general meeting of shareholders consists of two or more holders present in person or by proxy who hold or represent at least 25% of the voting power. We have opted out of the NASDAQ listing rule 5620(c) requirement that a quorum must constitute at least 33.33% of our outstanding share capital (see "Item 16G. Corporate Governance" below). A meeting adjourned for a lack of a quorum generally is adjourned to the same day in the following week at the same time and place or any time and place as the chairman of the meeting may decide with the consent of the holders of a majority of the voting power represented at the meeting in person or by proxy and voting on the question of adjournment. At the reconvened meeting, if a quorum is not present within one-half hour from the time designated for holding the meeting, the required quorum will consist of two shareholders present in person or by proxy, regardless of the percentage of our outstanding ordinary shares or voting power held by them.

Under the Companies Law, unless otherwise provided in the articles or applicable law (including the Companies Law), all resolutions of the shareholders require a simple majority. Those matters that constitute exceptions to the simple majority approval rule under the Companies Law are described below in this Item 10.B under "—Approval of Certain Transactions Under the Companies Law."

Approval of Certain Transactions Under the Companies Law

The Companies Law codifies the fiduciary duties that office holders, including directors and executive officers, owe to a company. An office holder's fiduciary duties consist of a duty of care and a duty of loyalty. The duty of loyalty includes (i) avoiding any conflict of interest between the office holder's position in the company and his or her personal affairs, (ii) avoiding any competition with the company, (iii) avoiding exploiting any business opportunity of the company in order to receive personal advantage for himself or others, and (iv) revealing to the company any information or documents relating to the company's affairs which the office holder has received due to his or her position as an office holder.

The Companies Law requires that an office holder of a company promptly disclose any conflict of interest (referred to as a personal interest under the Companies Law) that he or she may have and all related material information known to him or her, in connection with any existing or proposed transaction by the company. An interested office holder's disclosure must be made promptly and in any event no later than the first meeting of the board of directors at which the transaction is considered. A personal interest, as defined under the Companies Law, includes any personal interest held by the office holder's spouse, siblings, parents, grandparents or descendants; spouse's descendants, siblings or parents; and the spouses of any of the foregoing. A personal interest also includes any interest held by any corporation in which the office holder owns 5% or more of the share capital, is a director or chief executive officer (referred to under the Companies Law as the general manager) or in which he or she has the right to appoint at least one director or the general manager. A personal interest furthermore includes the personal interest of a person for whom the office holder holds a voting proxy or the interest of the office holder with respect to his or her vote on behalf of the shareholder for whom he or she holds a proxy even if such shareholder itself has no personal interest in the approval of the matter.

Under the Companies Law, an extraordinary transaction is defined as a transaction not in the ordinary course of business, not on market terms, or that is likely to have a material impact on the company's profitability, assets or liabilities.

If it is determined that an office holder has a personal interest in a transaction, approval by the board of directors is required for the transaction, unless the company's articles of association provide for a different method of approval. Further, so long as an office holder has disclosed his or her personal interest in a transaction, the board of directors may approve an action by the office holder that would otherwise be deemed a breach of his or her duty of loyalty. However, a company may not approve a transaction or action that is not in the company's interest or that is not performed by the office holder in good faith. An extraordinary transaction in which an office holder has a personal interest requires approval first by the company's audit committee and subsequently by the board of directors. The compensation of, or an undertaking to indemnify or insure, an office holder who is not a director requires approval first by the company's compensation committee, then by the company's board of directors. If such compensation arrangement or an undertaking to indemnify or insure is inconsistent with the company's stated compensation policy, or if the office holder is the chief executive officer (apart from a number of specific exceptions), then such arrangement is further subject to a Special Majority Approval for Compensation (which is described under "Item 6. Directors, Senior Management and Employees— C. Board Practices— Compensation Committee and Compensation Policy"). Arrangements regarding the compensation, indemnification or insurance of a director require the approval of the compensation committee, board of directors and shareholders by ordinary majority, in that order, and under certain circumstances, a Special Majority Approval for Compensation.

An office holder who has a personal interest in a matter that is considered at a meeting of the board of directors or the audit committee may not be present at the meeting or vote on the matter, subject to certain exceptions, including an allowance for him or her to be present in order to present the transaction, if the chairman of the audit committee or board of directors (as applicable) determines that such presentation by him or her is necessary. If the majority of the board members or members of the audit committee, as applicable, have a personal interest in a transaction, they may all be present for the presentation of, and voting upon, the transaction, but it must also then be approved by the shareholders of the company.

The Companies Law applies the same disclosure requirements to a controlling shareholder of a public company, which includes a shareholder that holds 25% or more of the voting rights in the company if no other shareholder owns more than 50% of the voting rights in the company. Extraordinary transactions with a controlling shareholder or in which a controlling shareholder has a personal interest, or a transaction with a controlling shareholder or his or her relative, directly or indirectly, including for receipt of services from an entity controlled by him or her (or his or her relative), and the terms of engagement and compensation of a controlling shareholder who is an office holder or an employee of the company, require the approval of the audit committee, the board of directors and the shareholders of the company. The shareholder approval must include the holders of a majority of the shares held by all shareholders who have no personal interest in the transaction and are voting on the subject matter (with abstentions being disregarded) or, alternatively, the total shares of shareholders who have no personal interest in the transaction and who vote against the transaction must not represent more than two percent (2%) of the voting rights in the company. To the extent that any such transaction with a controlling shareholder is for a period extending beyond three years, approval is required once every three years, unless the audit committee determines that the duration of the transaction is reasonable given the circumstances related thereto. In certain cases provided in regulations promulgated under the Companies Law, shareholder approval is not required.

The approvals of the board of directors and shareholders are required for a private placement of securities (or a series of related private placements during a 12-month period or that are part of one continuous transaction or transactions conditioned upon each other) in which:

- the securities issued represent at least 20% of the company's actual voting power prior to the issuance of such securities, and such issuance increases the relative holdings of a 5% shareholder or causes any person to become a 5% shareholder, and the consideration in the transaction (or a portion thereof) is not in cash or in securities listed on a recognized stock exchange, or is not at a fair market value; or
- a person would become, as a result of such transaction, a controlling shareholder of the company.

Further, under the Companies Law (as described under “Item 6. Directors, Senior Management and Employees— Board Practices— External Directors Under the Companies Law”), the appointment of external directors requires, in addition to a majority of the ordinary shares voting and approving the appointment, that either (a) the approving majority must include a majority of the shares of shareholders that are not controlling shareholders of the company and who do not have a personal interest in the election of the external director (other than a personal interest not deriving from a relationship with a controlling shareholder) and who are present and voting (with abstentions being disregarded), or (b) the shares of such non-controlling, non-interested shareholders that vote against the appointment may not constitute more than two percent (2%) of our total voting rights. In addition, as described below (see “—Modification of Class Rights” in this Item 10.B), under our articles, the alteration of the rights, privileges, preferences or obligations of any class of our share capital requires a simple majority of the class so affected, in addition to the ordinary majority of all classes of shares voting together as a single class at a shareholder meeting.

A further exception to the simple majority shareholder vote requirement is a resolution for the voluntary winding up, or other reorganization of, the company pursuant to Section 350 of the Companies Law, which requires the approval of holders of 75% of the voting rights represented at the meeting, in person, by proxy or by voting deed and voting on the resolution, provided that such shareholders constitute more than 50% of the shareholders voting on such matter.

Shareholder Duties

Under the Companies Law, a shareholder has a duty to act in good faith towards the company in which he holds shares and towards other shareholders and to refrain from abusing his power in the company including voting in the general meeting of shareholders on:

- any amendment to the articles of association;
- an increase of the company’s authorized share capital;
- a merger; or
- approval of actions of office holders in breach of their duty of loyalty and of interested party transactions.

A shareholder has the general duty to refrain from depriving rights of other shareholders. Any controlling shareholder, any shareholder who knows that it possesses the power to determine the outcome of a shareholder vote and any shareholder that, under the provisions of the articles of association, has the power to appoint an office holder in the company, is under a duty to act in fairness towards the company. The rules pertaining to a breach of contract apply to a breach of the duty to act in fairness, mutatis mutandis, bringing into account the shareholder’s position in the company. The Companies Law does not describe the substance of this duty.

Transfer of Shares

Fully paid ordinary shares are issued in registered form and may be freely transferred under our articles unless the transfer is restricted or prohibited by another instrument.

Modification of Class Rights

Under our articles, the rights attached to any class unless otherwise provided by the terms of the class including voting, rights to dividends and the like, may be varied by adoption of the necessary amendment to the articles, provided that the affected shareholders approve the change by a class meeting in which a simple majority of the voting power of the class represented at the meeting and voting on the matter approves the change.

Election of Directors

Our ordinary shares do not have cumulative voting rights in the election of directors. As a result, the holders of ordinary shares that represent more than 50% of the voting power represented at a shareholders meeting and voting on the matter (disregarding abstentions), have the power to elect all of our directors, other than the external directors who are appointed by a special majority of shareholders. For a summary of the provisions of our articles that govern our directors, see “Item 6. Directors, Senior Management and Employees.”

Anti-Takeover Provisions; Mergers and Acquisitions Under Israeli Law

Mergers

The Companies Law permits merger transactions if approved by each party's board of directors and shareholders. In order for shareholder approval to be obtained for a merger, a majority of the shares present and voting, excluding shares held by the other party to the merger, or by any person holding at least 25% of the means of control of the other party to the merger, or anyone acting on behalf of either of them, including any of their affiliates, must be voted in favor of the merger. If, however, the merger involves a merger with a company's own controlling shareholder or if the controlling shareholder has a personal interest in the merger, then the merger is instead subject to the same special majority approval that governs all extraordinary transactions with controlling shareholders (as described above in this Item 10 under "—Approval of Certain Transactions Under the Companies Law"). In the event that the merger transaction has not been approved by either of the above-described special majorities (as applicable), the holders of at least 25% of the voting rights of the company may apply to a court for approval of the merger. The court may approve the merger if it is found that the merger is fair and reasonable, taking into account the value of the parties to the merger and the consideration offered to the shareholders. Upon the request of a creditor of either party to the proposed merger, the court may delay or prevent the merger. A merger may not be consummated unless at least 50 days have passed from the time that a proposal for approval of the merger has been filed with the Israeli Registrar of Companies and 30 days have passed from the date of the approval of the shareholders of the merging companies.

The Companies Law further provides that the foregoing approval requirements will not apply to shareholders of a wholly-owned subsidiary in a rollup merger transaction, or to the shareholders of the acquirer in a merger or acquisition transaction if:

- the transaction does not involve an amendment to the acquirer's memorandum or articles of association;
- the transaction does not contemplate the issuance of more than 20% of the voting rights of the acquirer which would result in any shareholder becoming a controlling shareholder; and
- there is no "cross ownership" of shares of the merging companies, as described above.

Tender Offers

The Companies Law provides that an acquisition of shares of a public company must be made by means of a tender offer if as a result of the acquisition, the purchaser would become a holder of 25% or more of the voting rights in the company. This rule does not apply if there is already another holder of 25% or more of the voting rights in the company. Similarly, the Companies Law provides that an acquisition of shares in a public company must be made by means of a tender offer if as a result of the acquisition the purchaser would become a holder of more than 45% of the voting rights of the company, if there is no other holder of more than 45% of the voting rights of the company.

The foregoing provisions do not apply to:

- a private placement in which the company's shareholders approved such holder owning 25% or more of the voting rights in the company (if there is no other shareholder that holds 25% or more of the voting rights in the company); or more than 45% of the voting rights in the company (if there is no other shareholder that holds more than 45% of the voting rights in the company); or
- a purchase from an existing holder of 25% or more of the voting rights in the company that results in another person becoming a holder of 25% or more of the voting rights in the company or a purchase from an existing holder of more than 45% of the voting rights in the company that results in another person becoming a holder of more than 45% of the voting rights in the company.

Regulations adopted under the Companies Law provide that these tender offer requirements do not apply to companies whose shares are listed for trading only outside of Israel or have been publicly offered only outside of Israel if, according to the law in the country in which the shares are traded, including the rules and regulations of the stock exchange on which the shares are traded, there is either a limitation on acquisition of any level of control of the company, or the acquisition of any level of control requires the purchaser to do so by means of a tender offer to the public.

The Companies Law also provides that if following any acquisition of shares, the acquirer holds 90% or more of the company's shares or of a class of shares, the acquisition must be made by means of a tender offer for all of the target company's shares or all of the shares of the class, as applicable, not held by the acquirer. An acquirer who wishes to eliminate all minority shareholders must do so by way of a tender offer and hold, following consummation of the tender offer, more than 95% of all of the company's outstanding shares (and provided that a majority of the offerees that do not have a personal interest in such tender offer shall have approved it, which condition shall not apply if, following consummation of the tender offer, the acquirer holds at least 98% of all of the company's outstanding shares). If, however, following consummation of the tender offer the acquirer would hold 95% or less of the company's outstanding shares, the acquirer may not acquire shares tendered if by doing so the acquirer would own more than 90% of the shares of the target company. Appraisal rights are available with respect to a successfully completed full tender offer for a period of six months after such completion, although the acquirer may provide in the tender offer documents that a shareholder that accepts the offer may not seek appraisal rights.

C. Material Contracts

Please see “Item 5. Operating and Financial Review and Prospects—B. Liquidity and Capital Resources—Company Commitments” for a description of our loan agreement with an Israeli institutional investor and the terms of the trust agreements to which we are party in connection with our Series A Secured Debentures and Series C Secured Debentures. Please see “Item 6. Directors, Senior Management and Employees—B. Compensation—Option Grants to, and Service Agreement with, Chief Executive Officer” for a description of our service agreement with our Chief Executive Officer, Mr. Guy Bernstein. Beyond those agreements, Formula is not party to, and has not been party to in the last two years, any material contract entered into outside of its ordinary course of business. In addition, while our subsidiaries are party and have been party in the last two years to numerous contracts with customers, resellers and distributors, such contracts are entered into in the ordinary course of business. Furthermore, we do not deem any other individual contract entered into by any of our subsidiaries outside of the ordinary course of business (such as investment or acquisition agreements) during the last two years to be material to us, except as described below.

Share Purchase Agreement for Acquisition of StoneRiver

In the first quarter of 2017, Sapiens entered into a share purchase agreement with StoneRiver Group L.P., or the StoneRiver Seller, and StoneRiver, Inc., or StoneRiver, for the acquisition of all of the issued and outstanding share capital of StoneRiver. Sapiens consummated the acquisition later in the first quarter of 2017. StoneRiver is a Denver, Colorado-based provider of technology solutions and services to the insurance industry. The acquisition consideration was approximately \$100 million in cash, subject to certain adjustments based on working capital, transaction expenses, unpaid debt and certain litigation matters.

Immediately prior to closing, Sapiens purchased a representations and warranties insurance policy covering certain indemnifiable damages under the agreement, which we refer to as the StoneRiver Insurance. The StoneRiver Insurance provides for coverage of \$12,500,000 in the aggregate and its term is in general three years (except with respect to certain fundamental representations and warranties, as to which the term of the StoneRiver Insurance is six years).

D. Exchange Controls

Under current Israeli regulations, we may pay dividends or other distributions in respect of our ordinary shares either in Israeli or non-Israeli currencies. If we make these payments in Israeli currency, they will be freely converted, transferred and paid in non-Israeli currencies at the rate of exchange prevailing at the time of conversion. We expect, therefore, that dividends, if any, that we pay to holders of ADSs, will be paid in dollars, net of conversion expenses, expenses of the depository for our ADSs, the Bank of New York Mellon, and Israeli income taxes (if applicable). Because exchange rates between the NIS and the dollar fluctuate continuously, a U.S. shareholder will be subject to the risk of currency fluctuations between the date when we declare NIS-denominated dividends and the date when we pay them in NIS. See “Item 3. Key Information—Risk Factors.”

Non-residents of Israel may freely hold and trade our ADSs or ordinary shares pursuant to the general permit issued under the Israeli Currency Control Law, 1978. Neither our articles nor the laws of the State of Israel restrict in any way the ownership of our ordinary shares by non-residents, except that these restrictions may exist with respect to citizens of countries that are in a state of war with Israel.

E. Taxation

The following is a short summary of the material provisions of the tax environment to which shareholders may be subject. This summary is based on the current provisions of tax law. To the extent that the discussion is based on new tax legislation that has not been subject to judicial or administrative interpretation, we cannot assure you that the views expressed in the discussion will be accepted by the appropriate tax authorities or the courts.

The summary does not address all of the tax consequences that may be relevant to all holders of our ordinary shares and ADSs in light of each holder's particular circumstances and specific tax treatment. For example, the summary below does not address the tax treatment of residents of Israel and traders in securities who are subject to specific tax regimes. As individual circumstances may differ, holders of our ordinary shares and ADSs should consult their own tax adviser as to the United States, Israeli or other tax consequences of the purchase, ownership and disposition of ordinary shares and ADSs. The following is not intended, and should not be construed, as legal or professional tax advice and is not exhaustive of all possible tax considerations. Each individual should consult his or her own tax or legal adviser.

Israeli Taxation Considerations for Our Shareholders

Tax Consequences Regarding Disposition of Our ADSs or Ordinary Shares

Israeli law generally imposes a capital gain tax on the sale of any capital assets by residents of Israel, as defined for Israeli tax purposes, and on the sale of assets located in Israel, including shares of Israeli companies, by both residents and non-residents of Israel, unless a specific exemption is available or unless a tax treaty between Israel and the shareholder's country of residence provides otherwise. The Tax Ordinance distinguishes between "Real Capital Gain" and "Inflationary Surplus". The Inflationary Surplus is a portion of the total capital gain which is equivalent to the increase of the relevant asset's purchase price which is attributable to the increase in the Israeli consumer price index or, in certain circumstances, a foreign currency exchange rate, between the date of purchase and the date of sale. The Real Capital Gain is the excess of the total capital gain over the Inflationary Surplus.

Israeli Resident Individuals

As of January 1, 2012, the tax rate applicable to Real Capital Gain derived by Israeli individuals from the sale of shares, whether or not listed on a stock exchange, is 25%, unless such shareholder claims a deduction for interest and linkage differences expenses in connection with the purchase and holding of such shares, in which case the gain will generally be taxed at a rate of 30%. However, if such shareholder is considered a Substantial Shareholder (i.e., a person who holds, directly or indirectly, alone or together with another person who collaborates with such person on a permanent basis, 10% or more of any of the company's "means of control" (including, among other things, the right to receive profits of the company, voting rights, the right to receive the company's liquidation proceeds and the right to appoint a director)) at the time of sale or at any time during the preceding 12-month period, such gain will be taxed at the rate of 30%. Individual shareholders dealing in securities in Israel are taxed at their marginal tax rates applicable to business income (up to 47% in 2018 and thereafter).

Israeli Resident Corporations

Under current Israeli tax legislation, the tax rate applicable to Real Capital Gain derived by Israeli resident corporations from the sale of shares of an Israeli company is the general corporate tax rate. As described above, the corporate tax rate was 24% in 2017, and as of 2018 the corporate tax rate is 23%.

Non-Israeli Residents

Israeli capital gain tax is imposed on the disposal of capital assets by a non-Israeli resident if such assets are (i) located in Israel; (ii) shares or rights to shares in an Israeli resident company; or (iii) represent, directly or indirectly, rights to assets located in Israel, unless a tax treaty between Israel and the seller's country of residence provides otherwise. As mentioned above, Real Capital Gain is generally subject to tax at the corporate tax rate (24% in 2017 and 23% in 2018 and thereafter) if generated by a company, or at 25% or 30% if generated by an individual. Individual and corporate shareholders dealing in securities in Israel are taxed at the tax rates applicable to business income (a corporate tax rate for a corporation and a marginal tax rate of up to 47% for an individual in 2018 and thereafter).

Notwithstanding the foregoing, shareholders that are non-Israeli residents (individuals and corporations) are generally exempt from Israeli capital gain tax on any gains derived from the sale, exchange or disposition of shares publicly traded on the Tel Aviv Stock Exchange or on a recognized stock exchange outside of Israel, provided, among other things, that (i) such gains are not derived through a permanent establishment that the non-Israeli resident maintains in Israel, (ii) the shares were purchased after being listed on a recognized stock exchange, and (iii) with respect to shares listed on a recognized stock exchange outside of Israel, such shareholders are not subject to the Israeli Income Tax Law (Inflationary Adjustments) 5745-1985. However, non-Israeli corporations will not be entitled to the foregoing exemptions if Israeli residents (a) have a controlling interest of more than 25% in such non-Israeli corporation, or (b) are the beneficiaries of or are entitled to 25% or more of the revenues or profits of such non-Israeli corporation, whether directly or indirectly. Such an exemption is not applicable to a person whose gains from selling or otherwise disposing of the shares are deemed to be business income.

In addition, a sale of shares may be exempt from Israeli capital gain tax under the provisions of an applicable tax treaty. For example, under the U.S.-Israel Tax Treaty, which we refer to as the U.S.-Israel Treaty, the sale, exchange or disposition of shares of an Israeli company by a shareholder who is a U.S. resident (for purposes of the U.S.-Israel Treaty) holding the shares and is entitled to claim the benefits afforded to such person by the treaty, is generally exempt from Israeli capital gains tax unless either (i) the shareholder holds, directly or indirectly, shares representing 10% or more of the voting capital during any part of the 12-month period preceding such sale, exchange or disposition, subject to certain conditions; (ii) the shareholder, if an individual, has been present in Israel for a period or periods of 183 days or more in the aggregate during the applicable taxable year; (iii) the capital gain arising from such sale is attributable to a permanent establishment of the shareholder which is maintained in Israel under certain terms; (iv) the capital gain arising from such sale, exchange or disposition is attributed to real estate located in Israel; or (v) the capital gains arising from such sale, exchange or disposition is attributed to royalties. In each case, the sale, exchange or disposition of such shares would be subject to Israeli tax, to the extent applicable; however, under the U.S.-Israel Treaty, a U.S. resident would be permitted to claim a credit for the Israeli tax against the U.S. federal income tax imposed with respect to the sale, exchange or disposition, subject to the limitations in U.S. laws applicable to foreign tax credits. The U.S.-Israel Treaty does not provide such credit against any U.S. state or local taxes.

In some instances where our shareholders may be liable for Israeli tax on the sale of their ordinary shares, the payment of the consideration may be subject to the withholding of Israeli tax at source. Shareholders may be required to demonstrate that they are exempt from tax on their capital gains in order to avoid withholding at source at the time of sale. Specifically, in transactions involving a sale of all of the shares of an Israeli resident company, in the form of a merger or otherwise, the Israel Tax Authority may require from shareholders who are not liable for Israeli tax to sign declarations in forms specified by this authority or obtain a specific exemption from the Israel Tax Authority to confirm their status as non-Israeli residents, and, in the absence of such declarations or exemptions, may require the purchaser of the shares to withhold taxes at source.

Taxes Applicable to Dividends

Israeli Resident Shareholders

Israeli Resident Individuals. Israeli residents who are individuals are generally subject to Israeli income tax for dividends paid on our ordinary shares (other than bonus shares or share dividends) at 25%, or 30% if the recipient of such dividend is a Substantial Shareholder at the time of distribution or at any time during the preceding 12-month period. However, dividends distributed from taxable income accrued during the benefits period of an AE are subject to withholding tax at the rate of 15% (if the dividend is distributed during the tax benefits period under the Investment Law or within 12 years after such period) or 20% with respect to PFE. An average rate will be set in case the dividend is distributed from mixed types of income (regular and Approved/ Preferred income).

Israeli Resident Corporations. Israeli resident corporations are generally exempt from Israeli corporate tax for dividends paid on shares of Israeli resident corporations (like our ordinary shares and ADSs). However, dividends distributed from taxable income accrued during the benefits period of an AE are subject to withholding tax at the rate of 15%, if the dividend is distributed during the tax benefits period under the Investment Law or within 12 years after such period.

Non-Israeli Resident Shareholders

Non-Israeli residents (whether individuals or corporations) are generally subject to Israeli income tax on the receipt of dividends paid on ordinary shares, like our ordinary shares and ADSs, at the rate of 25% or 30% (if the dividend recipient is a Substantial Shareholder, at the time of distribution or at any time during the preceding 12-month period), or 15% if the dividend is distributed from income attributed to an AE or a BE (and 20% with respect to a PFE). Such dividends are generally subject to Israeli withholding tax at a rate of 25% so long as the shares are registered with a Nominee Company (whether the recipient is a Substantial Shareholder or not), and 15% if the dividend is distributed from income attributed to an AE or a BE (and 20% if the dividend is distributed from income attributed to a PFE), unless a reduced rate is provided under an applicable tax treaty (subject to the receipt in advance of a valid certificate from the Israel Tax Authority allowing for a reduced tax rate). For example, under the U.S.-Israel Treaty, the maximum rate of tax withheld at source in Israel on dividends paid to a holder of our ordinary shares and ADSs who is a U.S. resident (for purposes of the U.S.-Israel Treaty) is 25%. However, generally, the maximum rate of withholding tax on dividends, not generated by our Approved or BEs, as applicable, that are paid to a U.S. corporation holding at least 10% or more of our outstanding voting capital from the start of the tax year preceding the distribution of the dividend through (and including) the distribution of the dividend, is 12.5%, provided that no more than 25% of our gross income for such preceding year consists of certain types of dividends and interest. Notwithstanding the foregoing, dividends distributed from income attributed to an AE or a BE are subject to a withholding tax rate of 15% for such a U.S. corporate shareholder, provided that the condition related to our gross income for the previous year (as set forth in the previous sentence) is met. If the dividend is attributable partly to income derived from an AE, a Benefited Enterprise or a PFE, and partly to other sources of income, the withholding rate will be a mixed rate reflecting the relative portions of the two types of income. U.S. residents who are subject to Israeli withholding tax on a dividend may be entitled to a credit or deduction for U.S. federal income tax purposes in the amount of the taxes withheld, subject to detailed rules contained in United States tax legislation.

A non-Israeli resident who receives dividends from which tax was fully withheld is generally exempt from the obligation to file tax returns in Israel with respect to such income, provided that (i) such income was not generated from business conducted in Israel by the taxpayer, (ii) the taxpayer has no other taxable sources of income in Israel with respect to which a tax return is required to be filed and (iii) the taxpayer is not obliged to pay excess tax (as further explained below).

Excess Tax

Individuals who are subject to tax in Israel (whether any such individual is an Israeli resident or non-Israeli resident) are also subject to an additional tax for income exceeding a certain level. For 2017 and onwards, the additional tax is at a rate of 3% on annual income, including, but not limited to, dividends, interest and capital gain, exceeding NIS 640,000 (which amount is linked to the annual change in the Israeli consumer price index).

Estate and gift tax

Israeli law presently does not impose estate or gift taxes.

United States Federal Income Tax Considerations

The Tax Cuts and Jobs Act of 2017, or the TCJA, which was enacted on December 22, 2017, made significant changes to the U.S. Internal Revenue Code. Such changes include a reduction in the corporate tax rate and limitations on certain corporate deductions and credits, among other changes. The primary impact of the TCJA on us was a reduction of our effective tax rate in the US. The final impact of the TCJA may differ from the tax expense we incurred, due to, among other things, possible changes in the interpretations and assumptions made by us as a result of additional information, additional guidance that will be issued by the U.S. Department of Treasury, the IRS or other standard-setting bodies. There may be additional tax effects of the TCJA that may impact our future financial statements upon finalization of law, regulations, and additional guidance and will be accounted for when such guidance is issued.

The following is a discussion of the material U.S. federal income tax consequences relating to the purchase, ownership and disposition of the ordinary shares or ADSs by U.S. holders (as defined below) that hold such ordinary shares or ADSs as capital assets. This discussion is based on the Internal Revenue Code, or the Code, the regulations of the U.S. Department of the Treasury issued pursuant to the Code, or the Treasury Regulations, and administrative and judicial interpretations thereof, all as in effect on the date hereof and all of which are subject to change, possibly with retroactive effect, or to different interpretation. It is also based in part on representations by the depositary and assumes that each obligation under the deposit agreement and any related agreement will be performed in accordance with its terms.

This discussion does not address all of the tax consequences that may be relevant to specific U.S. holders in light of their particular circumstances or to U.S. holders subject to special treatment under U.S. federal income tax law (such as banks, insurance companies, tax-exempt entities, retirement plans, regulated investment companies, partnerships, dealers in securities, brokers, real estate investment trusts, certain former citizens or residents of the United States, persons who acquire ordinary shares or ADSs as part of a straddle, hedge, conversion transaction or other integrated investment, persons that have a "functional currency" other than the U.S. dollar, persons that own (or are deemed to own, indirectly or by attribution) 10% or more of our outstanding voting shares or persons that generally mark their securities to market for U.S. federal income tax purposes). This discussion does not address any U.S. state or local or non-U.S. tax consequences or any U.S. federal estate, gift or alternative minimum tax consequences.

If an entity treated as a partnership for U.S. federal income tax purposes holds ordinary shares or ADSs, the tax treatment of such partnership and each partner thereof will generally depend upon the status and activities of the partnership and such partner. A holder that is treated as a partnership for U.S. federal income tax purposes should consult its own tax advisor regarding the U.S. federal income tax considerations applicable to it and its partners of the purchase, ownership and disposition of ordinary shares or ADSs.

U.S. holders of ADSs will be treated as owners of the ordinary shares underlying their ADSs. Accordingly, deposits and withdrawals of ordinary shares in exchange for ADSs will not be taxable events for U.S. federal income tax purposes.

The U.S. Treasury has expressed concerns that parties to whom ADSs are released may be taking actions that are inconsistent with the claiming of foreign tax credits for U.S. holders of ADSs. Such actions would also be inconsistent with the claiming of the reduced rate of tax, described below, applicable to dividends received by certain non-corporate U.S. holders. Accordingly, the analysis of the availability of foreign tax credits and the reduced tax rate for dividends received by certain non-corporate U.S. holders, described below, could be affected by actions taken by parties to whom the ADSs are released.

This summary does not address the effect of any U.S. federal taxation (such as estate and gift tax) other than U.S. federal income taxation. In addition, this summary does not include any discussion of state, local or non-U.S. taxation. You are urged to consult your tax advisors regarding the non-U.S. and U.S. federal, state and local tax consequences of an investment in ordinary shares.

For purposes of this summary, as used herein, the term "U.S. holder" means a person that is a beneficial owner of an ADS or an ordinary share who is, for U.S. federal income tax purposes:

- an individual who is a citizen or, for U.S. federal income tax purposes, a resident of the United States;

- a corporation or other entity taxable as a corporation created or organized in or under the laws of the United States or any political subdivision thereof;
- an estate the income of which is subject to U.S. federal income taxation regardless of its source; or
- a trust if such trust has validly elected to be treated as a U.S. person for U.S. federal income tax purposes or if (1) a court within the United States is able to exercise primary supervision over its administration and (2) one or more U.S. persons have the authority to control all of the substantial decisions of such trust.

Unless otherwise specifically indicated, this discussion does not consider the U.S. tax consequences to a person that is not a U.S. holder (which we refer to as a non-U.S. holder) and considers only U.S. holders that will own our ordinary shares as capital assets (generally, for investment).

Furthermore, unless otherwise indicated, this discussion assumes that our company is not, and will not become, a “passive foreign investment company,” or a PFIC, for U.S. federal income tax purposes. See “—Passive Foreign Investment Companies” below.

Prospective investors should be aware that this discussion does not address the tax consequences to investors who are not U.S. holders. Prospective investors should consult their own tax advisors as to the particular tax considerations applicable to them relating to the purchase, ownership and disposition of ordinary shares or ADSs, including the applicability of U.S. federal, state and local tax laws and non-U.S. tax laws.

Taxation of Distributions on our Ordinary Shares or ADSs

Subject to the discussion below under “Tax Consequences if We are a Passive Foreign Investment Company,” a distribution paid by us with respect to our ordinary shares and ADSs to a U.S. holder will be treated as dividend income to the extent that the distribution does not exceed our current and accumulated earnings and profits, as determined for U.S. federal income tax purposes.

Dividends that are received by U.S. holders that are individuals, estates or trusts generally will be taxed at the rate applicable to long-term capital gains, provided those dividends meet the requirements of “qualified dividend income.” The maximum long-term capital gains rate is 20% for individuals with annual taxable income that exceeds certain thresholds. In addition, under the Patient Protection and Affordable Care Act, higher income taxpayers must pay an additional 3.8 percent tax on net investment income to the extent certain threshold amounts of income are exceeded. See “Tax on Net Investment Income” in this Item below. For this purpose, qualified dividend income generally includes dividends paid by a foreign corporation if certain holding period and other requirements are met and either (a) the stock of the foreign corporation with respect to which the dividends are paid is “readily tradable” on an established securities market in the U.S. (e.g., the NASDAQ Global Select Market) or (b) the foreign corporation is eligible for benefits of a comprehensive income tax treaty with the U.S. which includes an information exchange program and is determined to be satisfactory by the U.S. Secretary of the Treasury. Dividends that fail to meet such requirements and dividends received by corporate U.S. holders are taxed at ordinary income rates. No dividend received by a U.S. holder will be a qualified dividend (i) if the U.S. holder held the ordinary share and ADS with respect to which the dividend was paid for less than 61 days during the 121-day period beginning on the date that is 60 days before the ex-dividend date with respect to such dividend, excluding for this purpose, under the rules of Code Section 246(c), any period during which the U.S. holder has an option to sell, is under a contractual obligation to sell, has made (and not closed) a short sale of, is the grantor of a deep-in-the-money or otherwise nonqualified option to buy, or has otherwise diminished its risk of loss by holding other positions with respect to, such ordinary share and ADSs (or substantially identical securities); or (ii) to the extent that the U.S. holder is under an obligation (pursuant to a short sale or otherwise) to make related payments with respect to positions in property substantially similar or related to the ordinary share and ADS with respect to which the dividend is paid. If we were to be a “passive foreign investment company” (as such term is defined in the Code), or “PFIC”, for any taxable year, dividends paid on our ordinary shares and ADSs in such year or in the following taxable year would not be qualified dividends. See the discussion below regarding our PFIC status under “Tax Consequences if We Are a Passive Foreign Investment Company.” In addition, a non-corporate U.S. holder will be able to take qualified dividend income into account in determining its deductible investment interest (which is generally limited to its net investment income) only if it elects to do so; in such case the dividend income will be taxed at ordinary income rates.

The amount of any distribution which exceeds the amount treated as a dividend will be treated first as a non-taxable return of capital, reducing the U.S. holder’s tax basis in our ordinary shares and ADSs to the extent thereof, and then as capital gain from the deemed disposition of the ordinary shares and ADSs. Corporate holders will not be allowed a deduction for dividends received in respect of the ordinary shares and ADSs.

Distributions of current or accumulated earnings and profits paid in foreign currency to a U.S. holder will be includible in the income of a U.S. holder in a U.S. dollar amount calculated by reference to the exchange rate on the day the distribution is received. A U.S. holder that receives a foreign currency distribution and converts the foreign currency into U.S. dollars subsequent to receipt may have foreign exchange gain or loss based on any appreciation or depreciation in the value of the foreign currency against the U.S. dollar, which will generally be U.S. source ordinary income or loss.

Taxation of the Disposition of the Ordinary Shares or ADSs

Subject to the discussion below under “Tax Consequences if We are a Passive Foreign Investment Company,” upon the sale, exchange or other disposition of our ordinary shares and ADSs, a U.S. holder will recognize capital gain or loss in an amount equal to the difference between the amount realized on the disposition and the U.S. holder’s tax basis in our ordinary shares and ADSs. The gain or loss recognized on the disposition of the ordinary shares and ADSs will be long-term capital gain or loss if the U.S. holder held the ordinary shares and ADSs for more than one year at the time of the disposition and would be eligible for a reduced rate of taxation for certain non-corporate U.S. holders. The maximum long-term capital gains rate is 20% for individuals with annual taxable income that exceeds certain thresholds. In addition, under the Patient Protection and Affordable Care Act, higher income taxpayers must pay an additional 3.8 percent tax on net investment income to the extent certain threshold amounts of income are exceeded. See “Tax on Net Investment Income” in this Item below. Capital gain from the sale, exchange or other disposition of ordinary shares and ADSs held for one year or less is short-term capital gain and taxed as ordinary income. Gain or loss recognized by a U.S. holder on a sale, exchange or other disposition of our ordinary shares and ADSs generally will be treated as U.S. source income or loss. The deductibility of capital losses is subject to certain limitations.

A U.S. holder that uses the cash method of accounting calculates the dollar value of the proceeds received on the sale as of the date that the sale settles. However, a U.S. holder that uses the accrual method of accounting is required to calculate the value of the proceeds of the sale as of the trade date and may therefore realize foreign currency gain or loss. A U.S. holder that uses the accrual method may avoid realizing foreign currency gain or loss by electing to use the settlement date to determine the proceeds of sale for purposes of calculating the foreign currency gain or loss. In addition, a U.S. holder that receives foreign currency upon disposition of its ordinary shares and ADSs and converts the foreign currency into dollars after the settlement date or trade date (whichever date the U.S. holder is required to use to calculate the value of the proceeds of sale) may have foreign exchange gain or loss based on any appreciation or depreciation in the value of the foreign currency against the dollar, which will generally be U.S. source ordinary income or loss.

Tax Consequences if We Are a Passive Foreign Investment Company

We would be a passive foreign investment company, or PFIC, for a taxable year if either (1) 75% or more of our gross income in the taxable year is passive income; or (2) the average percentage (by value determined on a quarterly basis) in a taxable year of our assets that produce, or are held for the production of, passive income is at least 50%. Passive income for this purpose generally includes, among other things, certain dividends, interest, royalties, rents and gains from commodities and securities transactions and from the sale or exchange of property that gives rise to passive income. If we own (directly or indirectly) at least 25% by value of the stock of another corporation, we would be treated for purposes of the foregoing tests as owning our proportionate share of the other corporation’s assets and as directly earning our proportionate share of the other corporation’s income. As discussed below, we believe that we were not a PFIC for 2018.

If we were a PFIC, each U.S. holder would (unless it made one of the elections discussed below on a timely basis) be taxable on gain recognized from the disposition of our ordinary shares and ADSs (including gain deemed recognized if our ordinary shares and ADSs are used as security for a loan) and upon receipt of certain excess distributions (generally, distributions that exceed 125% of the average amount of distributions in respect to such shares received during the preceding three taxable years or, if shorter, during the U.S. holder’s holding period prior to the distribution year) with respect to our ordinary shares and ADSs as if such income had been recognized ratably over the U.S. holder’s holding period for the shares. The U.S. holder’s income for the current taxable year would include (as ordinary income) amounts allocated to the current taxable year and to any taxable year prior to the first day of the first taxable year for which we were a PFIC. Tax would also be computed at the highest ordinary income tax rate in effect for each other taxable year to which income is allocated, and an interest charge on the tax as so computed would also apply. The tax liability with respect to the amount allocated to the taxable year prior to the taxable year of the distribution or disposition cannot be offset by any net operating losses. Additionally, if we were a PFIC, U.S. holders who acquire our ordinary shares and ADSs from decedents (other than nonresident aliens) would be denied the normally-available step-up in basis for such shares to fair market value at the date of death and, instead, would have a tax basis in such shares equal to the lesser of the decedent’s basis or the fair market value of such shares on the decedent’s date of death.

As an alternative to the tax treatment described above, a U.S. holder could elect to treat us as a “qualified electing fund” (a QEF), in which case the U.S. holder would be taxed, for each taxable year that we are a PFIC, on its pro rata share of our ordinary earnings and net capital gain (subject to a separate election to defer payment of taxes, which deferral is subject to an interest charge). Special rules apply if a U.S. holder makes a QEF election after the first taxable year in its holding period in which we are a PFIC. We have agreed to supply U.S. holders with the information needed to report income and gain under a QEF election if we were a PFIC. Amounts includable in income as a result of a QEF election will be determined without regard to our prior year losses or the amount of cash distributions, if any, received from us. A U.S. holder’s basis in its Ordinary Shares and ADSs will increase by any amount included in income and decrease by any amounts not included in income when distributed because such amounts were previously taxed under the QEF rules. So long as a U.S. holder’s QEF election is in effect with respect to the entire holding period for its Ordinary Shares and ADSs, any gain or loss realized by such holder on the disposition of its Ordinary Shares and ADSs held as a capital asset generally will be capital gain or loss. Such capital gain or loss ordinarily would be long-term if such U.S. holder had held such Ordinary Shares and ADSs for more than one year at the time of the disposition and would be eligible for a reduced rate of taxation for certain non-corporate U.S. holders. The maximum long-term capital gains rate is 20% for individuals with annual taxable income that exceeds certain thresholds. The QEF election is made on a shareholder-by-shareholder basis, applies to all Ordinary Shares and ADSs held or subsequently acquired by an electing U.S. holder and can be revoked only with the consent of the IRS. The QEF election must be made on or before the U.S. holder’s tax return due date, as extended, for the first taxable year to which the election will apply.

As an alternative to making a QEF election, a U.S. holder of PFIC stock that is “marketable stock” (e.g., “regularly traded” on the NASDAQ Capital Market) may, in certain circumstances, avoid certain of the tax consequences generally applicable to holders of stock in a PFIC by electing to mark the stock to market as of the beginning of such U.S. holder’s holding period for our ordinary shares and ADSs. Special rules apply if a U.S. holder makes a mark-to-market election after the first year in its holding period in which we are a PFIC. As a result of such an election, in any taxable year that we are a PFIC, a U.S. holder would generally be required to report gain or loss to the extent of the difference between the fair market value of the ordinary shares and ADSs at the end of the taxable year and such U.S. holder’s tax basis in such shares and ADSs at that time. Any gain under this computation, and any gain on an actual disposition of our ordinary shares and ADSs in a taxable year in which we are PFIC, would be treated as ordinary income. Any loss under this computation, and any loss on an actual disposition of our ordinary shares and ADSs in a taxable year in which we are PFIC, would be treated as ordinary loss to the extent of the cumulative net-mark-to-market gain previously included. Any remaining loss from marking our ordinary shares and ADSs to market will not be allowed, and any remaining loss from an actual disposition of our ordinary shares and ADSs generally would be capital loss. A U.S. holder’s tax basis in its ordinary shares and ADSs is adjusted annually for any gain or loss recognized under the mark-to-market election. There can be no assurances that there will be sufficient trading volume with respect to our ordinary shares and ADSs for the ordinary shares and ADSs to be considered “regularly traded” or that our ordinary shares and ADSs will continue to trade on the NASDAQ Capital Market. Accordingly, there are no assurances that our ordinary shares and ADSs will be marketable stock for these purposes. As with a QEF election, a mark-to-market election is made on a shareholder-by-shareholder basis, applies to all ordinary shares and ADSs held or subsequently acquired by an electing U.S. holder and can only be revoked with consent of the IRS (except to the extent our ordinary shares and ADSs no longer constitute “marketable stock”).

Based on an analysis of our assets and income, we believe that we were not a PFIC for 2018. We currently expect that we will not be a PFIC in 2019. The tests for determining PFIC status are applied annually and it is difficult to make accurate predictions of future income and assets, which are relevant to this determination. Accordingly, there can be no assurance that we will not become a PFIC in any future taxable years. U.S. holders who hold our ordinary shares and ADSs during a period when we are a PFIC will be subject to the foregoing rules, even if we cease to be a PFIC, subject to certain exceptions for U.S. holders who made QEF, mark-to-market or certain other special elections. U.S. holders are urged to consult their tax advisors about the PFIC rules, including the consequences to them of making a mark-to-market or QEF election with respect to our ordinary shares and ADSs in the event that we qualify as a PFIC.

U.S. holders are urged to consult their tax advisors regarding the application of the PFIC rules, including eligibility for and the manner and advisability of making, the QEF election or the mark-to-market election.

Tax on Net Investment Income

A U.S. holder that is an individual or estate, or a trust that does not fall into a special class of trusts that is exempt from the tax, will be subject to a 3.8% tax on the lesser of (1) the U.S. holder’s “net investment income” for the relevant taxable year and (2) the excess of the U.S. holder’s modified adjusted gross income for the taxable year over a certain threshold (which in the case of individuals will be between \$125,000 and \$250,000, depending on the individual’s circumstances). A U.S. holder’s net investment income generally will include its dividends on our ordinary shares and ADSs and net gains from dispositions of our ordinary shares and ADSs, unless those dividends or gains are derived in the ordinary course of the conduct of trade or business (other than trade or business that consists of certain passive or trading activities). Net investment income, however, may be reduced by deductions properly allocable to that income. A U.S. holder that is an individual, estate or trust is urged to consult its tax adviser regarding the applicability of the Medicare tax to its income and gains in respect of its investment in our ordinary shares or ADSs.

Non-U.S. Holders of Ordinary Shares or ADSs

Except as provided below, a non-U.S. holder of our ordinary shares and ADSs will not be subject to U.S. federal income or withholding tax on the receipt of dividends on, or the proceeds from the disposition of, our ordinary shares and ADSs, unless, in the case of U.S. federal income taxes, that item is effectively connected with the conduct by the non-U.S. holder of a trade or business in the United States and, in the case of a resident of a country which has an income tax treaty with the United States, such item is attributable to a permanent establishment in the United States or, in the case of an individual, a fixed place of business in the United States. In addition, gain recognized on the disposition of our ordinary shares and ADSs by an individual non-U.S. holder will be subject to tax in the United States if the non-U.S. holder is present in the United States for 183 days or more in the taxable year of the sale and certain other conditions are met.

Information Reporting and Backup Withholding

A U.S. holder generally is subject to information reporting and may be subject to backup withholding at a rate of up to 28% with respect to dividend payments on, or receipt of the proceeds from the disposition of, our ordinary shares and ADSs. Backup withholding will not apply with respect to payments made to exempt recipients, including corporations and tax-exempt organizations, or if a U.S. holder provides correct taxpayer identification number, certifies that such holder is not subject to backup withholding or otherwise establishes an exemption. Non-U.S. holders are not subject to information reporting or backup withholding with respect to dividend payments on, or receipt of the proceeds from the disposition of, ordinary shares and ADSs in the U.S., or by a U.S. payer or U.S. middleman, provided that such non-U.S. holder provides a taxpayer identification number, certifies to its foreign status, or otherwise establishes an exemption. Backup withholding is not an additional tax and may be claimed as a credit against the U.S. federal income tax liability of a holder, or alternatively, the holder may be eligible for a refund of any excess amounts withheld under the backup withholding rules, in either case, provided that the required information is furnished to the IRS.

Information Reporting by Certain U.S. Holders

U.S. citizens and individuals taxable as resident aliens of the United States that own "specified foreign financial assets" with an aggregate value in a taxable year in excess of \$50,000 (as determined under rules in Treasury regulations) and that are required to file a U.S. federal income tax return generally will be required to file an information report with respect to those assets with their tax returns. IRS Form 8938 has been issued for that purpose. "Specified foreign financial assets" include any financial accounts maintained by foreign financial institutions, foreign stocks held directly, and interests in foreign estates, foreign pension plans or foreign deferred compensation plans. Under those rules, our ordinary shares, whether owned directly or through a financial institution, estate or pension or deferred compensation plan, would be "specified foreign financial assets". Under Treasury regulations, the reporting obligation applies to certain U.S. entities that hold, directly or indirectly, specified foreign financial assets. Penalties can apply if there is a failure to satisfy this reporting obligation. A U.S. holder is urged to consult his tax adviser regarding his reporting obligation.

The above description is not intended to constitute a complete analysis of all tax consequences relating to acquisition, ownership and disposition of our ordinary shares or ADSs. You should consult your tax advisor concerning the tax consequences of your particular situation.

F. Dividends and Paying Agents

Not applicable.

G. Statement by Experts

Not applicable.

H. Documents on Display

Formula is subject to the reporting requirements of the Exchange Act that are applicable to a foreign private issuer. In accordance with the Exchange Act, we file reports with the SEC, including annual reports on Form 20-F by April 30 each year. In addition, we furnish interim financial information on Form 6-K on a quarterly basis. We also furnish to the SEC under cover of Form 6-K certain other material information required to be made public in Israel, filed with and made public by any stock exchange or distributed by us to our shareholders. You may inspect without charge and copy at prescribed rates such material at the public reference facilities maintained by the SEC, at 100 F Street, N.E., Washington, D.C. 20549. You may also obtain copies of such material from the SEC at prescribed rates by writing to the Public Reference Section of the SEC, 100 F Street, N.E., Washington, D.C. 20549. Please call the SEC at 1-800-SEC-0330 for further information on the public reference room.

The SEC maintains an Internet site at <http://www.sec.gov> that contains reports and other material that are filed through the SEC's Electronic Data Gathering, Analysis and Retrieval (EDGAR) system. Formula began filing through the EDGAR system beginning in October 2002. The Exchange Act file number for our SEC filings is 000-29442.

Formula's ADSs are traded on the NASDAQ Global Select Market. You may inspect reports and other information concerning Formula at the offices of the Financial Industry Regulatory Authority, Inc., or FINRA, 9509 Key West Avenue, Rockville, Maryland 20850. Copies of our SEC filings and submissions are also submitted to the Israel Securities Authority, or ISA, and the TASE. Such copies can be retrieved electronically through the MAGNA distribution site of the ISA (www.magna.isa.gov.il) and the TASE website (maya.tase.co.il).

A copy of each report that we submit in accordance with applicable United States law is available for public review at our principal executive offices, at 5 Haplada Street, Or Yehuda 6021805, Israel. Information about us is also available on our website at <http://www.formulasystems.com>. Such information is not part of this annual report.

I. Subsidiary Information

Not applicable.

ITEM 11. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate and Currency Exchange Rate Fluctuations; Impact of Inflation

In light of the nature of our activities, we invest our cash and cash equivalents primarily in short-term and long-term deposits. As of December 31, 2018, substantially all of the cash that we held was invested in dollar, Euro, Indian Rupee, and British Pound accounts bearing interest based on LIBOR, and NIS accounts bearing interest based on the Israeli prime rate. Given the current low interest rates in the financial markets, assuming a 10% interest rate decrease, the net decrease in our earnings from our financial assets would be negligible, holding other variables constant.

As described above in this annual report (under “Item 3.D Risk Factors—Risks Related to Operations in Israel—Fluctuations in foreign currency values may affect our business and results of operations” and “Item 5. Operating and Financial Review and Prospects—Operating Results— Impact of Inflation and Currency Fluctuations on Results of Operations”), because most of our software services revenues are received in NIS, a devaluation of the NIS against the dollar adversely impacts our dollar-recorded software services revenues and operating profit, by reducing the dollar-recorded revenues for those software services. Accordingly, a devaluation of the dollar against the NIS positively impacts our dollar-recorded software services revenues and operating profit.

At the same time, a significant portion of our revenues from proprietary software products is currently denominated in dollars and other currencies, particularly the British pound, Euro, Indian rupee and to a lesser extent Japanese yen, while a substantial portion of our expenses relating to the proprietary software products, principally salaries and related personnel expenses, is denominated in NIS. As a result, the devaluation of the dollar relative to the NIS increases our operating costs (as denominated in dollars), and, therefore, adversely affects the operational profitability of our proprietary software product reporting segment. An increase in the rate of Israeli inflation compounds this negative impact by further increasing our NIS (and ultimately dollar-recorded) operating expenses, and, consequently, reducing our operational profitability in that business line. Also, the devaluation of these other currencies—particularly Euro, British pound and to a lesser extent Japanese yen—relative to the U.S. dollar reduces our dollar recorded revenues from sales of our proprietary software products and thereby harms our results of operations.

The net effect of these risks stemming from currency exchange rate fluctuations on our operating results can be quantified as follows:

A hypothetical 10% devaluation or appreciation of foreign currencies (primarily the NIS, GBP, Euro, Japanese yen, PLN and INR) against the US dollar, with all other variables held constant on the expected sales, would have resulted in a decrease or increase in 2018 sales revenues of approximately \$93.9 million or \$112.4 million, respectively.

In addition, a hypothetical 10% devaluation of the dollar against the NIS in the year ended December 31, 2018 would have impacted the outstanding Series A Secured Debentures issued by Formula and the NIS 200 million loan that was extended to Formula by a leading Israeli institutional investor in January 2014 (each of which is described above under “Item 5.B. Liquidity and Capital Resources”), which remaining principal amounts as of December 31, 2018 were valued at NIS 207.8 million and NIS 88.4million, respectively, by increasing financial expenses by approximately \$8.8 million in 2018.

Depending upon the circumstances, we will consider entering into currency hedging transactions to decrease the risk of financial exposure from fluctuations in the exchange rate of the dollar, Euro, Japanese yen and/or British Pound against the NIS, or the Euro, Japanese yen and/or British pound against the dollar. There can be no assurance that these activities, or others that we may use from time to time, will eliminate the negative financial impact of currency fluctuations and inflation. We do not—nor do we intend to in the future—engage in currency speculation.

Fluctuations in Market Price of Securities We Hold

We hold the securities of three subsidiaries— Magic Software, Sapiens and Matrix— which are companies whose securities are listed for trading on the NASDAQ Global Market, NASDAQ Capital Market and/or the TASE. We consider these holdings as long-term holdings. We are exposed to the risk of fluctuation of the price of these companies' securities. All of these publicly traded companies have experienced significant historical volatility in their stock prices. Fluctuations in the market price of our holdings in these companies may result in the fluctuation of the value of our assets. We typically do not attempt to reduce or eliminate our market exposure on these securities.

Generally, we do not hold nor have we issued, to any material extent, any derivatives or other financial instruments for trading purposes except for our Series A Secured Debentures, Series B Convertible Debentures and Series C Secured Debentures issued pursuant to our public offerings in Israel on the TASE.

ITEM 12. DESCRIPTION OF SECURITIES OTHER THAN EQUITY SECURITIES

A. Debt Securities

Not applicable.

B. Warrants and Rights

Not applicable.

C. Other Securities

Not applicable.

D. American Depositary Shares

Fees and charges payable by our ADS holders

The Bank of New York Mellon, which we refer to as the Depositary, serves as the depositary for our ADS program. Pursuant to the deposit agreement by and among our company, the Depositary and owners and holders of our ADSs, which we refer to as the Deposit Agreement, ADS holders may be required to pay various fees to the Depositary. In particular, the Depositary may charge the following fees to any party depositing or withdrawing ADSs, or to any party surrendering American Depositary Receipts (which we refer to as ADRs) that represent the ADSs, or to whom ADRs are issued (including, without limitation, issuance pursuant to a stock dividend or stock split declared by us or an exchange of stock involving the ADRs or any deposited ADSs underlying the ADRs or a distribution of ADRs pursuant to a distribution of underlying shares), as applicable:

- taxes and governmental charges;
- such registration fees as may from time to time be in effect for the registration of transfers of shares generally on our share register and applicable to transfers of shares to the name of the Depositary or its nominee or agent in connection with making deposits or withdrawals under the Deposit Agreement;
- such cable, telex and facsimile transmission expenses as are expressly provided for in the Deposit Agreement;
- such expenses as are incurred by the Depositary in the conversion of foreign currency;
- a fee of \$5.00 or less per 100 ADSs (or portion thereof) for the execution and delivery of ADRs (including in connection with distributions of shares or rights by us) and in connection with the surrender of receipts and withdrawal of the underlying shares;
- a fee of \$.02 or less per ADS (or portion thereof) for any cash distribution made pursuant to the Deposit Agreement, including in connection with distributions of shares or rights;
- a fee for the distribution of securities in connection with certain distributions, such fee being in an amount equal to the fee for the execution and delivery of ADSs which would have been charged as a result of the deposit of such securities but which securities are instead distributed by the Depositary to ADR holders; and
- any other charges payable by the Depositary or any of its agents in connection with the servicing of ADSs or other deposited securities underlying the ADRs.

Amounts received from the Depositary

We do not receive any fees directly or indirectly from the Depositary.

PART II

ITEM 13. DEFAULTS, DIVIDEND ARREARAGES AND DELINQUENCIES

None.

ITEM 14. MATERIAL MODIFICATIONS TO THE RIGHTS OF SECURITY HOLDERS AND USE OF PROCEEDS

None.

ITEM 15. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, including our Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of our disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) of the Exchange Act) as of December 31, 2018. Based on such evaluation, the Chief Executive Officer and the Chief Financial Officer have concluded that, as of December 31, 2018, the Company's disclosure controls and procedures are effective.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Rules 13a-15(f) and 15d-15(f) of the Exchange Act. Our management, including our Chief Executive Officer and our Chief Financial Officer, conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework and criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) as of the end of the period covered by this report. Such evaluation did not cover the internal controls of Adaptik Corporation since it was first acquired in March 2018.

Based on that evaluation, our management has concluded that our internal control over financial reporting was effective as of December 31, 2018. Notwithstanding the foregoing, there can be no assurance that our internal control over financial reporting will detect or uncover all failures of persons within the Company to comply with our internal procedures, as all internal control systems, no matter how well designed, have inherent limitations. Therefore, even those systems determined to be effective may not prevent or detect misstatements.

Attestation Report of the Registered Public Accounting Firm

The attestation report of Kost Forer Gabbay & Kasierer, a member of EY Global, an independent registered public accounting firm in Israel, on our management's assessment of our internal control over financial reporting as of December 31, 2018 is provided on page F-2, as included under Item 18 of this annual report.

Changes in Internal Control over Financial Reporting

Based on the evaluation conducted by our Chief Executive Officer and our Chief Financial Officer pursuant to Rules 13a-15(d) and 15d-15(d) under the Exchange Act, our management has concluded that there was no change in our internal control over financial reporting that occurred during the year ended December 31, 2018 that materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 16. RESERVED

ITEM 16A. AUDIT COMMITTEE FINANCIAL EXPERT

Our board of directors has determined that Ms. Iris Yahal, who serves on the audit committee of our board of directors, qualifies as our "audit committee financial expert," as defined under the rules and regulations of the SEC.

ITEM 16B. CODE OF ETHICS

We have adopted a code of business conduct and ethics, or code of ethics, applicable to Formula's Chief Executive Officer and Chief Financial Officer (who also serves as its principal accounting officer) and any person performing similar functions, as well as to its directors and other employees. A copy of the code of ethics is available to all of Formula's employees, investors and others without charge, upon request to the following address: Formula Systems (1985) Ltd., 5 Haplada St., Or Yehuda 6021805, Israel, Attn: Chief Executive Officer.

The chairman of our audit committee may approve a request by our Chief Executive Officer, Chief Financial Officer (who also serves as our principal accounting officer) or any person performing similar functions for a waiver from the requirements of our code of ethics pertaining to (i) honest and ethical conduct, including the ethical handling of actual or apparent conflicts of interest between personal and professional relationship; (ii) full, fair, accurate, timely and understandable disclosure in reports and documents that we must file with, or submit to, the SEC and in other public communications made by us; (iii) compliance with applicable governmental laws, rules and regulations; (iv) the prompt internal reporting of violation of the code of ethics to the chairman of our audit committee; and (v) accountability for adherence to the code of ethics; provided in each case that the person requesting such waiver provides to our audit committee a full disclosure of the particular circumstances relating to such request. The chairman of our audit committee will first determine whether a waiver of the relevant requirements of the code of ethics is required and, if such waiver is required, whether a waiver will be granted. The person requesting such waiver may be required to agree to certain conditions before a waiver or a continuing waiver is granted.

Any amendments to the code of ethics and all waivers from compliance with the code of ethics granted to our Chief Executive Officer, Chief Financial Officer (who also serves as our principal accounting officer) or any person performing similar functions with respect to its requirements described in the above paragraph will be publicly disclosed by us via a report on Form 6-K in accordance with the regulations of the SEC. No such amendment was adopted, nor waiver provided, by us during the fiscal year ended December 31, 2018.

ITEM 16C. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Principal Accountant Fees and Services

Formula and its subsidiaries and affiliate company paid the following fees for professional services rendered by Kost Forer Gabbay & Kasierer, Certified Public Accountant, a member firm of Ernst & Young Global, independent registered public accounting firm (which we refer to as Kost Forer), to the Company for the years ended December 31, 2017 and December 31, 2018, respectively:

Services Rendered	Year Ended December 31,	
	2017	2018
	(US dollars in thousands)	
Audit ⁽¹⁾	\$ 1,707	\$ 1,602
Tax and other ⁽²⁾	\$ 578	\$ 638
Total	<u>\$ 2,285</u>	<u>\$ 2,240</u>

(1) The audit fees for the years ended December 31, 2017 and 2018 were for professional services rendered for: the audits of our annual consolidated financial statements; agreed-upon procedures related to the review of our consolidated quarterly information; statutory audits of Formula and its subsidiaries and affiliated companies; issuance of comfort letters and consents; and assistance with review of documents filed with the SEC.

(2) Tax fees for the years ended December 31, 2017 and 2018 were for services related to tax compliance, including the preparation of tax returns and claims for refund, and tax advice.

Formula paid the following fees for professional services rendered by Kost Forer to the Company (on a stand-alone basis, excluding services provided to the subsidiaries and affiliates of the Company) for the years ended December 31, 2017 and December 31, 2018, respectively:

Services Rendered	Year Ended December 31,	
	2017	2018
	(US dollars in thousands)	
Audit ⁽¹⁾	\$ 86	\$ 94
Tax and other ⁽²⁾	\$ 101	\$ 30
Total	<u>\$ 187</u>	<u>\$ 124</u>

(1) The audit fees for the years ended December 31, 2017 and 2018 were for professional services rendered for: the audits of our annual consolidated financial statements; agreed-upon procedures related to the review of our consolidated quarterly information; statutory audits of Formula and its subsidiaries and affiliated companies; issuance of comfort letters and consents; and assistance with review of documents filed with the SEC.

(2) Tax fees for the years ended December 31, 2017 and 2018 were for services related to tax compliance, including the preparation of tax returns and claims for refund, and tax advice.

Policy on Pre-Approval of Audit and Non-Audit Services of Independent Auditors

Our audit committee is responsible for the oversight of our (and our subsidiaries') independent auditor's work. Our audit committee has adopted a policy and procedures for the pre-approval of audit and non-audit services rendered by our independent registered public accountants, Kost Forer Gabbay & Kasierer, a member of Ernst & Young Global. Pre-approval of an audit or non-audit service may be given as a general pre-approval, as part of the audit committee's approval of the scope of the engagement of our independent auditor, or on an individual basis. Any proposed services that exceed general pre-approved levels also require specific pre-approval by our audit committee. The policy prohibits retention of the independent public accountants to perform the prohibited non-audit functions defined in Section 201 of the Sarbanes-Oxley Act of 2002 or the rules of the SEC, and also requires the audit committee to consider whether proposed services are compatible with the independence of the public accountants.

During 2016 and 2017, all audit and non-audit services were pre-approved by our audit committee in accordance with the policy and procedures.

ITEM 16D. EXEMPTIONS FROM THE LISTING STANDARDS FOR AUDIT COMMITTEES

Not applicable.

ITEM 16E. PURCHASES OF EQUITY SECURITIES BY THE ISSUER AND AFFILIATED PURCHASERS

None.

ITEM 16F. CHANGE IN REGISTRANT'S CERTIFYING ACCOUNTANT

None.

ITEM 16G. CORPORATE GOVERNANCE

The NASDAQ Global Select Market requires companies with securities listed thereon to comply with its corporate governance standards. As a foreign private issuer, we are not required to comply with all of the rules that apply to listed domestic U.S. companies. Pursuant to NASDAQ listing rule 5615(a)(3), we have notified NASDAQ that with respect to the corporate governance practices described below, we instead follow Israeli law and practice and accordingly do not follow the NASDAQ listing rules. Except for the differences described below, we do not believe there are any significant differences between our corporate governance practices and those that apply to a U.S. domestic issuer under the NASDAQ corporate governance rules.

- **Independent Director Oversight of Nominations:** Under Israeli law, there is no requirement to have an independent nominating committee or the independent directors of a company select (or recommend for selection) director nominees, as is required under NASDAQ listing rule 5605(e) for a U.S. domestic issuer. Our board of directors handles this process, as is permitted by our articles and the Companies Law. We also need not adopt a formal board resolution or charter addressing the director nominations process and such related matters as may be required under the U.S. federal securities laws, as NASDAQ requires for a U.S. issuer.
- **Shareholder Approval:** Pursuant to Israeli law, we seek shareholder approval for all corporate actions requiring such approval under the requirements of the Companies Law, which are different from, or in addition to, the requirements for seeking shareholder approval under NASDAQ listing rule 5635. See "Item 10. Additional Information— Memorandum and Articles of Association— Approval of Certain Transactions Under the Companies Law" in this annual report for a description of the transactions requiring shareholder approval under the Companies Law.
- **Quorums for Shareholders Meetings:** The quorum for a shareholders meeting, as stipulated in our articles, complies with the provisions of Israeli law, and requires the presence, in person or by proxy of holders of 25% of our outstanding ordinary shares, in lieu of the requirement specified in NASDAQ listing rule 5620(c) under which the quorum for any shareholders meeting shall not be less than 33⅓% of the outstanding voting shares of a listed company.
- **Required Timing for Annual Shareholders Meetings:** Under the Companies Law, we are required to hold an annual shareholders meeting each calendar year and within 15 months of the last annual shareholders meeting, which differs from the corresponding requirement under NASDAQ listing rule 5620(a), which mandates that a listed company hold its annual shareholders meeting within one year of the company's fiscal year-end.

ITEM 16H. MINE SAFETY DISCLOSURES

Not applicable.

PART III

ITEM 17. FINANCIAL STATEMENTS

We have elected to provide financial statements and related information pursuant to Item 18.

ITEM 18. FINANCIAL STATEMENTS

Our consolidated financial statements and the report of our independent registered public accounting firm in connection therewith are filed as part of this annual report, as noted on the pages below:

Reports of Independent Registered Public Accounting Firm	F-2 – F-5
Consolidated statements of financial position	F-6 – F-7
Consolidated statements of profit or loss	F-8
Consolidated Statements of Comprehensive Income	F-9
Consolidated Statements of Changes in Equity	F-10 – F-13
Consolidated Statements of Cash Flow	F-14 – F-16
Notes to Consolidated Financial Statements	F-17 – F-109

ITEM 19. EXHIBITS

EXHIBIT INDEX

Exhibit No.

1.1	Memorandum of Association⁽¹⁾
1.2	Amended and Restated Articles of Association, as adopted by Formula Systems (1985) Ltd. on January 8, 2012⁽²⁾
2.1	Depository Agreement by and among Formula Systems (1985) Ltd., Bank of New York Mellon and the holders of the American Depositary Shares of Formula Systems (1985) Ltd.⁽¹⁾
2.2	Description of the rights associated with the American Depositary Shares (and ordinary shares represented thereby) of Formula Systems (1985) Ltd.⁽³⁾
4.1	Form of Letter of Indemnification for officers and directors, adopted by Formula Systems (1985) Ltd. on January 8, 2012⁽⁴⁾
4.2	English translation of Formula Systems (1985) Ltd. Employees and Office Holders Share Option Plan (2008)⁽⁵⁾
4.3	Formula Systems (1985) Ltd. 2011 Share Incentive Plan, as amended⁽⁶⁾
4.4	Formula Systems (1985) Ltd. Compensation Policy⁽⁷⁾
8.1	List of Subsidiaries*
12.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Exchange Act*
12.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(a)/Rule 15d-14(a) under the Exchange Act*
13.1	Certification of the Chief Executive Officer pursuant to Rule 13a-14(b)/Rule 15d-14(b) under the Exchange Act and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
13.2	Certification of the Chief Financial Officer pursuant to Rule 13a-14(b)/Rule 15d-14(b) under the Exchange Act and 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002*
15.1	Consent of Kost, Forer, Gabbay & Kasierer, a Member of Ernst & Young Global*
15.2	Consent of KDA Audit Corporation*

* Filed herewith.

(1) Incorporated by reference to the registrant's Registration Statement on Form F-1 (File No. 333-8858).

(2) Incorporated by reference to Exhibit 99.1 to the Report of Foreign Private Issuer on Form 6-K furnished by the registrant to the Securities and Exchange Commission on January 18, 2012.

(3) Incorporated by reference to the registrant's Report of Foreign Private Issuer on Form 6-K furnished by the registrant to the Securities and Exchange Commission on July 30, 2015.

(4) Incorporated by reference to Exhibit 99.2 to the Report of Foreign Private Issuer on Form 6-K furnished by the registrant to the Securities and Exchange Commission on January 18, 2012.

(5) Incorporated by reference to Exhibit 4.3 to the Annual Report on Form 20-F for the year ended December 31, 2008 filed by the registrant with the Securities and Exchange Commission on April 27, 2009.

(6) Incorporated by reference to Exhibit 4.3 to the Annual Report on Form 20-F for the ended December 31, 2013, filed by the registrant with the Securities and Exchange Commission on April 30, 2014.

(7) Incorporated by reference to Appendix A to Exhibit 99.2 to the Report of Foreign Private Issuer on Form 6-K furnished by the registrant to the Securities and Exchange Commission on November 16, 2016.

SIGNATURES

The registrant hereby certifies that it meets all of the requirements for filing on Form 20-F and that it has duly caused and authorized the undersigned to sign this annual report on its behalf.

FORMULA SYSTEMS (1985) LTD.

By: /s/ Guy Bernstein
Guy Bernstein
Chief Executive Officer

May 15, 2019
Date

FORMULA SYSTEMS (1985) LTD.
CONSOLIDATED FINANCIAL STATEMENTS
AS OF DECEMBER 31, 2018
U.S. DOLLARS IN THOUSANDS

INDEX

	<u>Page</u>
Reports of Independent Registered Public Accounting Firm	F-2 – F-5
Consolidated Statements of Financial Position	F-6 – F-7
Consolidated Statements of Profit or Loss	F-8
Consolidated Statements of Comprehensive Income	F-9
Consolidated Statements of Changes in Equity	F-10 – F-13
Consolidated Statements of Cash Flows	F-14 – F-16
Notes to Consolidated Financial Statements	F-17 – F-109



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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Shareholders of

FORMULA SYSTEMS (1985) LTD.

Opinion on the Financial Statements

We have audited the accompanying consolidated statements of financial position of Formula Systems (1985) Ltd. and its subsidiaries (the "Company") as of December 31, 2018 and 2017, the related consolidated statements of profit or loss, comprehensive income, changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2018, and the related notes (collectively referred to as the "consolidated financial statements"). In our opinion, based on our audits and the report of other auditors, the consolidated financial statements present fairly, in all material respects, the financial position of the Company at December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018, in conformity with International Financial Reporting Standards ("IFRS") as issued by the International Accounting Standards Board.

We did not audit the financial statements of Magic Software Japan K.K., a wholly-owned subsidiary of Magic Software Enterprises Ltd., which reflect total assets constituting 0.3% and 0.3% at December 31, 2018 and 2017, respectively, and total revenues constituting 0.7%, 0.7% and 1.0% for the years ended December 31, 2018, 2017 and 2016, respectively, of the related consolidated totals. Those statements were audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to the amounts included for Magic Software Japan K.K., is based solely on the report of the other auditors.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated May 15, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

[Table of Contents](#)

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits and the report of other auditors provide a reasonable basis for our opinion.

/s/ KOST FORER GABBAY & KASIERER
A Member of Ernst & Young Global

We have served as the Company's auditor since 2010.

Tel-Aviv, Israel
May 15, 2019



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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Shareholders and the Board of Directors of

FORMULA SYSTEMS (1985) LTD.

Opinion on Internal Control over Financial Reporting

We have audited Formula Systems (1985) Ltd. and its subsidiaries' ("the Company") internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) ("the COSO criteria"). As indicated in the accompanying Management's Annual Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Adaptik Corporation, which was acquired in March 2018 and constituted approximately 0.5% of the Company's total assets as of December 31, 2018 and approximately 1.0% of the Company's total revenue for the year then ended. Our audit of internal control over financial reporting of the Company also did not include an evaluation of the internal control over financial reporting Adaptik Corporation. In our opinion, the Company, based on our audit and the report of other auditors, maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on the COSO criteria.

We did not examine the effectiveness of internal control over financial reporting of Magic Software Japan K.K., a wholly owned subsidiary of Magic Software Enterprises Ltd., whose financial statements reflect total assets and revenues constituting 0.3% and 0.7%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018. The effectiveness of Magic Software Japan K.K.'s internal control over financial reporting was audited by other auditors whose report has been furnished to us, and our opinion, insofar as it relates to the effectiveness of Magic Software Japan K.K.'s internal control over financial reporting, is based solely on the report of the other auditors.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated statements of financial position of the Company as of December 31, 2018 and 2017, the related consolidated statements of profit or loss, comprehensive income, changes in shareholders' equity and cash flows for each of the three years in the period ended December 31, 2018 and the related notes and our report dated May 15, 2019 expressed an unqualified opinion thereon based on our audit and the report of the other auditors.

Basis for Opinion

The Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and performing such other procedures as we considered necessary in the circumstances. We believe that our audit and the report of other auditors provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ KOST FORER GABBAY & KASIERER
A Member of Ernst & Young Global

Tel-Aviv, Israel
May 15, 2019

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

U.S. dollars in thousands

	Note	December 31,	
		2018	2017
ASSETS			
CURRENT ASSETS:			
Cash and cash equivalents		\$ 268,492	\$ 245,947
Short-term deposits		16,881	735
Marketable securities	5	9,913	14,138
Trade receivables (net of allowances for doubtful accounts of \$6,051 and \$5,195 as of December 31, 2017 and 2018, respectively)		441,468	385,778
Prepaid expenses and other accounts receivable	6	40,397	44,904
Inventories		3,882	3,299
Total current assets		781,033	694,801
LONG-TERM ASSETS:			
Deferred taxes	21f	14,214	15,878
Prepaid expenses and other accounts receivable		23,121	16,581
Total long-term assets		37,335	32,459
INVESTMENTS IN COMPANIES ACCOUNTED FOR AT EQUITY METHOD	8	25,710	25,315
PROPERTY, PLANTS AND EQUIPMENT, NET	9	29,182	29,807
INTANGIBLE ASSETS, NET	10	150,046	163,983
GOODWILL	11	640,855	617,272
Total assets		\$ 1,664,161	\$ 1,563,637

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF FINANCIAL POSITION

U.S. dollars in thousands (except share and per share data)

	Note	December 31,	
		2018	2017
LIABILITIES AND EQUITY			
CURRENT LIABILITIES:			
Credit from banks and others	12, 14	\$ 71,180	\$ 70,819
Debentures	15	55,822	4,826
Trade payables		118,786	95,339
Deferred revenues		59,509	58,905
Employees and payroll accrual		114,904	111,707
Other accounts payable	13	53,969	53,145
Dividend payable		5,015	-
Liabilities in respect of business combinations		5,602	6,811
Put options of non-controlling interests	2(22)G	40,926	31,395
Total current liabilities		525,713	432,947
LONG-TERM LIABILITIES:			
Loans from banks and others	14	139,527	135,616
Debentures	15	114,902	133,739
Other long-term liabilities		8,734	7,244
Deferred taxes	21f	34,800	36,605
Deferred revenues		4,906	9,340
Liability in respect of business combinations		5,625	4,711
Put options of non-controlling interests	2(22)G	15,673	21,481
Employee benefit liabilities		8,884	9,032
Total long-term liabilities		333,051	357,768
COMMITMENTS AND CONTINGENCIES	19		
EQUITY	20		
Formula Systems (1985) Ltd. shareholders' equity:			
Share capital:			
Ordinary shares of NIS 1 par value -			
Authorized: 25,000,000 shares at December 31, 2017 and 2018;			
Issued: 15,307,402 and 15,318,958 at December 31, 2017 and 2018, respectively; Outstanding: 14,738,782 and 14,750,338 at December 31, 2017 and 2018, respectively			
Additional paid-in capital		4,190	4,187
Retained earnings		98,008	98,040
Accumulated other comprehensive income		262,557	239,156
Treasury shares (568,620 shares as of December 31, 2017 and 2018)		3,134	18,078
		(259)	(259)
Total equity attributable to Formula Systems (1985) Ltd.'s shareholders		367,630	359,202
Non-controlling interests	22a	437,767	413,720
Total equity		805,397	772,922
Total liabilities and equity		\$ 1,664,161	\$ 1,563,637

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF PROFIT OR LOSS

U.S. dollars in thousands (except share and per share data)

	Note	Year ended December 31,		
		2018	2017	2016
Revenues:				
Proprietary software products and related services	22c	\$ 370,027	\$ 341,350	\$ 273,235
Software services		1,122,961	1,013,789	835,386
Total revenues		1,492,988	1,355,139	1,108,621
Cost of revenues:				
Proprietary software products and related services		207,859	201,302	149,244
Other software products and related services		951,817	857,014	700,596
Total cost of revenues		1,159,676	1,058,316	849,840
Gross profit		333,312	296,823	258,781
Research and development expenses, net		41,223	39,853	22,328
Selling, marketing, general and administrative expenses		182,472	184,164	147,953
Operating income		109,617	72,806	88,500
Financial expenses	22b	15,852	29,870	17,594
Financial income		7,562	8,751	6,008
Pre-tax income before share of profits of companies accounted for at equity, net		101,327	51,687	76,914
Taxes on income	21h	24,301	13,371	21,163
Share of profits of companies accounted for at equity, net	8	369	1,124	349
Net income		\$ 77,395	\$ 39,440	\$ 56,100
Attributable to:				
Equity holders of the Company		32,365	10,352	22,445
Non-controlling interests		45,030	29,088	33,655
		\$ 77,395	\$ 39,440	\$ 56,100
Net earnings per share attributable to equity holders of The Company	22d			
Basic earnings per share		\$ 2.20	\$ 0.72	\$ 1.58
Diluted earnings per share		\$ 2.14	\$ 0.68	\$ 1.49

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

U.S. dollars in thousands

	Year ended December 31,		
	2018	2017	2016
Net income	\$ 77,395	\$ 39,440	\$ 56,100
Other comprehensive income (loss) net of tax effect:			
<u>Amounts that will not be reclassified subsequently to profit or loss:</u>			
Actuarial gain (loss) from defined benefit plans	387	(898)	(2,696)
Share in other comprehensive income of joint venture	58	104	-
<u>Amounts that will be or that have been reclassified to profit or loss when specific conditions are met:</u>			
Unrealized gain (loss) on debt instruments at fair value through other comprehensive income, net	(37)	144	30
Amounts transferred to the statement of profit or loss for sale of debt instruments at fair value through other comprehensive income, net	-	(94)	16
Foreign exchange differences on translation of foreign operations	(30,395)	42,389	1,668
Total other comprehensive income (loss), net of tax	(29,987)	41,645	(982)
Total Comprehensive income	<u>47,408</u>	<u>81,085</u>	<u>55,118</u>
Total comprehensive income attributable to:			
Equity holders of the Company	17,610	30,354	21,948
Non-controlling interests	29,798	50,731	33,170
	<u>\$ 47,408</u>	<u>\$ 81,085</u>	<u>\$ 55,118</u>

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

U.S. dollars in thousands (except share and per share data)

	Share Capital		Additional paid-in capital	Retained earnings	Accumulated other comprehensive Loss	Treasury shares (cost)	Non-controlling interests	Total Equity
	Number	Amount						
Balance as of January 1, 2018	14,738,782	\$ 4,187	\$ 98,040	\$ 239,156	\$ 18,078	\$ (259)	\$ 413,720	\$ 772,922
Impact of the adoption of IFRS 15	-	-	-	874	-	-	941	1,815
Balance as of January 1, 2018 (Including the impact of the adoption of IFRS 15)	14,738,782	\$ 4,187	\$ 98,040	\$ 240,030	\$ 18,078	\$ (259)	\$ 414,661	\$ 774,737
Net income	-	-	-	32,365	-	-	45,030	77,395
Foreign currency translation reserve	-	-	-	-	(14,983)	-	(15,412)	(30,395)
Actuarial gain from defined benefit plans	-	-	-	189	-	-	198	387
Unrealized loss on debt instruments at fair value through other comprehensive income, net	-	-	-	-	(19)	-	(18)	(37)
Share in other comprehensive income of joint venture	-	-	-	-	58	-	-	58
Total other comprehensive income (loss)	-	-	-	189	(14,944)	-	(15,232)	(29,987)
Total comprehensive income (loss)	-	-	-	32,554	(14,944)	-	29,798	47,408
Issuance of restricted shares to employees	10,000	3	(3)	-	-	-	-	-
Issuance of shares upon conversion of convertible debentures	1,556	(*)	64	-	-	-	-	64
Cost of share-based payment (Note 17)	-	-	234	-	-	-	3,747	3,981
Dividend to Formula's shareholders	-	-	-	(10,027)	-	-	-	(10,027)
Dividend to non-controlling interests in subsidiaries	-	-	-	-	-	-	(31,316)	(31,316)
Dilution in Formula's share in Magic due to issuance of Magic's ordinary shares	-	-	2,682	-	-	-	22,722	25,404
Transactions with non-controlling interests due to holding changes, including exercise of employees stock options	-	-	(526)	-	-	-	1,731	1,205
Acquisition of non-controlling interests	-	-	(590)	-	-	-	(1,325)	(1,915)
Non-controlling interests due to expiration of put options	-	-	498	-	-	-	855	1,353
Settlement of put options over non-controlling interests	-	-	(2,391)	-	-	-	(3,933)	(6,324)
Non-controlling interests arising from initially consolidated company	-	-	-	-	-	-	827	827
Balance as of December 31, 2018	14,750,338	\$ 4,190	\$ 98,008	\$ 262,557	\$ 3,134	\$ (259)	\$ 437,767	\$ 805,397

(*) Less than one thousand U.S. dollar

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

U.S. dollars in thousands (except share and per share data)

	Share Capital		Additional paid-in capital	Retained earnings	Accumulated other comprehensive income (loss)	Treasury shares (cost)	Non-controlling interests	Total Equity
	Number	Amount						
Balance as of January 1, 2017	14,728,782	\$ 4,184	\$ 100,571	\$ 234,268	\$ (2,377)	\$ (259)	\$ 387,455	\$ 723,842
Net income	-	-	-	10,352	-	-	29,088	39,440
Foreign currency translation reserve	-	-	-	-	20,325	-	22,064	42,389
Actuarial loss from defined benefit plans	-	-	-	(453)	-	-	(445)	(898)
Unrealized gain on debt instruments at fair value through other comprehensive income, net	-	-	-	-	70	-	74	144
Realized gain on debt instruments at fair value through other comprehensive income, net	-	-	-	-	(44)	-	(50)	(94)
Share in other comprehensive income of joint venture	-	-	-	-	104	-	-	104
Total other comprehensive income (loss)	-	-	-	(453)	20,455	-	21,643	41,645
Total comprehensive income	-	-	-	9,899	20,455	-	50,731	81,085
Issuance of restricted shares to employees	10,000	3	(3)	-	-	-	-	-
Cost of share-based payment (Note 17)	-	-	1,058	-	-	-	2,976	4,034
Dividend to Formula's shareholders	-	-	-	(5,011)	-	-	-	(5,011)
Dividend to non-controlling interests in subsidiaries	-	-	-	-	-	-	(27,645)	(27,645)
Transactions with non-controlling interests due to holding changes, including exercise of employees stock options	-	-	(1,306)	-	-	-	4,553	3,247
Acquisition of non-controlling interests	-	-	3	-	-	-	3	6
Non-controlling interests due to expiration of put options	-	-	-	-	-	-	2,440	2,440
Settlement of put options over non-controlling interests	-	-	(2,283)	-	-	-	(6,821)	(9,104)
Non-controlling interests arising from exercise of options in indirect subsidiary	-	-	-	-	-	-	28	28
Balance as of December 31, 2017	14,738,782	\$ 4,187	\$ 98,040	\$ 239,156	\$ 18,078	\$ (259)	\$ 413,720	\$ 772,922

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

U.S. dollars in thousands (except share and per share data)

	Share Capital		Additional paid-in capital	Retained earnings	Accumulated other comprehensive Loss	Treasury shares (cost)	Non-controlling interests	Total Equity
	Number	Amount						
Balance as of January 1, 2016	14,728,782	\$ 4,184	\$ 98,946	\$ 230,256	\$ (3,228)	\$ (259)	\$ 375,380	\$ 705,279
Net income	-	-	-	22,445	-	-	33,655	56,100
Foreign currency translation reserve	-	-	-	-	828	-	840	1,668
Actuarial loss from defined benefit plans	-	-	-	(1,348)	-	-	(1,348)	(2,696)
Unrealized gain on debt instruments at fair value through other comprehensive income, net	-	-	-	-	15	-	15	30
Realized loss on debt instruments at fair value through other comprehensive income, net	-	-	-	-	8	-	8	16
Total other comprehensive income (loss)	-	-	-	(1,348)	851	-	(485)	(982)
Total comprehensive income	-	-	-	21,097	851	-	33,170	55,118
Cost of share-based payment (Note 17)	-	-	772	-	-	-	3,622	4,394
Dividend to Formula's shareholders	-	-	-	(17,085)	-	-	-	(17,085)
Dividend to non-controlling interests in subsidiaries	-	-	-	-	-	-	(22,229)	(22,229)
Transactions with non-controlling interests due to holding changes, including exercise of employees stock options	-	-	1,200	-	-	-	(559)	641
Acquisition of non-controlling interests	-	-	(740)	-	-	-	(1,809)	(2,549)
Non-controlling interests arising from initially consolidated companies	-	-	-	-	-	-	26,232	26,232
Settlement of put options over non-controlling interests	-	-	393	-	-	-	(26,352)	(25,959)
Balance as of December 31, 2016	14,728,782	\$ 4,184	\$ 100,571	\$ 234,268	\$ (2,377)	\$ (259)	\$ 387,455	\$ 723,842

CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY

U.S. dollars in thousands (except share and per share data)

	Year ended December 31,		
	2018	2017	2016
Reserve from debt instruments at fair value through other comprehensive income	358	377	351
Foreign currency translation reserve	4,829	19,812	(513)
Reserve from derivatives	4	4	4
Share in other comprehensive loss of companies accounted for at equity, net	(2,057)	(2,115)	(2,219)
Accumulated other comprehensive income (loss)	<u>\$ 3,134</u>	<u>\$ 18,078</u>	<u>\$ (2,377)</u>

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

U.S. dollars in thousands

	Year ended December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net income	\$ 77,395	\$ 39,440	\$ 56,100
Adjustments to reconcile net income to net cash provided by operating activities:			
Share of profits of companies accounted for at equity, net	(369)	(1,124)	(349)
Depreciation and amortization	48,734	43,646	32,370
Changes in value of debentures, net	(3,025)	5,277	1,371
Increase (decrease) in employee benefit liabilities	565	752	(1,656)
Loss (gain) from sale of property, plants and equipment	1	26	(3,147)
Stock-based compensation expenses	3,981	4,552	4,394
Changes in value of short-term and long term loans from banks and others and deposits, net	(2,296)	6,731	500
Changes in deferred taxes, net	(5,743)	(12,819)	211
Change in liability in respect of business combinations	666	1,531	2,023
Loss (gain) from sale and increase in value of marketable securities classified as trading	(53)	149	(136)
Amortization of premium and accrued interest on debt instruments at fair value through other comprehensive income	189	716	(260)
Realized loss (gain) from sale of debt instruments at fair value through other comprehensive income	-	(94)	16
Change in non-controlling interests' put option	-	-	1,779
Change in value of dividend preference derivative in TSG	(333)	(260)	-
Working capital adjustments:			
Decrease (increase) in inventories	(1,024)	1,037	923
Increase in trade receivables	(66,069)	(38,223)	(30,086)
Decrease (increase) in other current and long-term accounts receivable	(5,768)	755	(513)
Increase in trade payables	19,955	6,086	5,423
Increase in other accounts payable and employees and payroll accrual	12,781	7,199	8,673
Increase (decrease) in deferred revenues	3,008	15,718	(2,681)
Net cash provided by operating activities	<u>82,595</u>	<u>81,095</u>	<u>74,955</u>

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

U.S. dollars in thousands

	Year ended December 31,		
	2018	2017	2016
Cash flows from investing activities:			
Payments for business acquisitions, net of cash acquired (Appendix C)	(49,069)	(119,103)	(44,832)
Cash paid in conjunction with deferred payments and contingent liabilities related to business combinations	(8,288)	(8,817)	(2,944)
Purchase of intangible assets	(180)	-	(391)
Purchase of property and equipment	(11,625)	(9,573)	(9,137)
Proceeds from maturity and sale net of investment in debt instruments at fair value through other comprehensive income or loss, net	4,000	40,622	8,450
Proceeds from sale of property, plants and equipment	440	-	2,347
Investment in and loans to affiliates and other companies	26	(25)	(25,813)
Change in restricted cash in other accounts receivable	362	-	(544)
Change in short-term and long-term deposits, net	(17,292)	(888)	2,665
Capitalization of software development and other costs	(8,826)	(9,338)	(9,769)
Net cash used in investing activities	(90,452)	(107,122)	(79,968)
Cash flows from financing activities:			
Exercise of employees stock options in subsidiaries	1,206	3,240	931
Issuance of Magic's ordinary shares, net	25,404	-	-
Dividend paid to non-controlling interests	(34,103)	(31,231)	(24,131)
Dividend to Formula's shareholders	(5,012)	(12,081)	(10,014)
Short-term bank credit, net	(20,741)	(21,176)	20,720
Repayment of long-term loans from banks and others	(42,884)	(46,065)	(37,415)
Receipt of long term loans	83,478	52,734	49,582
Proceeds from issuance of debentures, net	45,356	78,229	-
Repayment of long-term liabilities to office of the chief scientist	(220)	(502)	(510)
Repayment of debentures	(9,383)	(3,656)	-
Purchase of non-controlling interests	(1,992)	-	(3,166)
Repayment of capital lease	-	(480)	(443)
Cash paid due to exercise of put option by non-controlling interests	(142)	-	-
Distribution to ultimate parent for a business acquisition under common control	-	-	(1,440)
Net cash provided by (used in) financing activities	40,967	19,012	(5,886)
Effect of exchange rate changes on cash and cash equivalents	(10,565)	12,912	(81)
Increase (decrease) in cash and cash equivalents	22,545	5,897	(10,980)
Cash and cash equivalents at beginning of year	245,947	240,050	249,141
Cash and cash equivalents at end of year	\$ 268,492	\$ 245,947	\$ 238,161

The accompanying notes are an integral part of the financial statements.

CONSOLIDATED STATEMENTS OF CASH FLOWS

U.S. dollars in thousands

	Year ended December 31,		
	2018	2017	2016
A. <u>Supplemental cash flow information:</u>			
Cash paid (received) in respect of:			
Interest paid	\$ 9,061	\$ 6,448	\$ 6,770
Interest received	\$ (680)	\$ (145)	\$ (2,334)
Taxes paid (received), net	\$ 23,295	\$ 19,680	\$ 19,176
B. <u>Non-cash activities:</u>			
Dividend payable to Formula's shareholders	\$ 5,015	\$ -	\$ 7,070
Purchase of property and equipment	\$ 76	\$ -	\$ 2,260
Deferred payment related to business combinations	\$ 200	\$ 962	\$ -
Dividend payable to non-controlling interests	\$ -	\$ 692	\$ -
Disposal of property	\$ 155	\$ -	\$ -
Issuance of Formula's ordinary shares as a result of conversion of debentures	\$ 64	\$ -	\$ -
C. <u>Acquisition of newly-consolidated subsidiaries and activities, net of cash acquired:</u>			
Assets and liabilities of subsidiaries consolidated as of acquisition date:			
Working capital (other than cash and cash equivalents)	2,889	9,631	(2,938)
Property and equipment	(547)	(1,332)	(3,494)
Goodwill and intangible assets	(63,819)	(148,085)	(92,878)
Other long-term assets	(103)	(125)	-
Liabilities to banks and others	38	281	3,391
Long-term liabilities	421	-	-
Deferred tax liability, net	5,590	17,911	10,130
Liability to formerly shareholders	2,053	-	-
Deferred payments and contingent consideration	3,582	2,616	11,997
Non-controlling interests at acquisition date	827	-	28,960
Total	\$ (49,069)	\$ (119,103)	\$ (44,832)

The accompanying notes form an integral part of the financial statements.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 1:- GENERAL

a. General:

Formula Systems (1985) Ltd. ("Formula" or the "Company") was incorporated in Israel and began its business operations in 1985. Since 1991, Formula's ordinary shares, par value NIS 1.0 per share, have been traded on the Tel-Aviv Stock Exchange ("TASE"), and, in 1997, began trading through American Depositary Shares ("ADSs") under the symbol "FORTY" on the NASDAQ Global Market in the United States until January 3, 2011, at which date the listing of Formula's ADSs was transferred to the NASDAQ Global Select Market ("NASDAQ"). Each ADS represents one ordinary share of Formula. The Company is considered an Israeli resident. The controlling shareholder of the Company is Asseco Poland S.A. ("Asseco"), a Polish public company, traded on the Warsaw Stock Exchange.

b. Formula, through its investees (collectively, the "Group") is engaged in providing software services, proprietary and non-proprietary software solutions, software product marketing and support, computer infrastructure and integration solutions and training and integration. The Group operates through five directly held subsidiaries; Matrix IT Ltd. ("Matrix"); Magic Software Enterprises Ltd. ("Magic"), Sapiens International Corporation N.V. ("Sapiens"), Insync Staffing Solutions, Inc. ("Insync") and Michpal Micro Computers (1983) Ltd. ("Michpal"), and one jointly controlled entity: TSG IT Advanced Systems Ltd. ("TSG").

c. The following table presents the ownership of Formula's directly held investees as of the dates indicated (the list consists only of active companies):

<u>Name of Investee</u>	<u>Percentage of ownership</u>	
	<u>December 31,</u>	
	<u>2018</u>	<u>2017</u>
Matrix	49.21	49.50
Magic	45.21	47.12
Sapiens	48.08	48.14
Insync	90.09	90.09
Michpal ⁽¹⁾	100	100
TSG ⁽²⁾	50.00	50.00

1) Michpal's results of operations are consolidated in the Company's results of operations commencing January 1, 2017.

2) TSG's results of operations are reflected in the Company's results of operations using the equity method of accounting commencing May 9, 2016.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 1:- GENERAL (Cont.)

d. Definitions:

In these financial statements:

The Company	- Formula Systems (1985) Ltd.
The Group	- Formula Systems (1985) Ltd. and its investees.
Subsidiaries	- Companies that are controlled by the Company (as defined in IFRS 10) and whose accounts are consolidated with those of the Company.
Jointly controlled entities	- Companies owned by various entities that have a contractual arrangement for joint control and are accounted for using the equity method of accounting.
Associates	- Companies over which the Company has significant influence and that are not subsidiaries. The Company's investment therein is included in the financial statements using the equity method of accounting.
Investees	- Subsidiaries, jointly controlled entities and associates.
Interested parties and controlling shareholder	- As defined in the Israeli Securities Regulations (Annual Financial Statements), 2010.
Related parties	- As defined in IAS 24.

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES

The following accounting policies have been applied consistently in the financial statements for all periods presented, unless otherwise stated.

1) Basis of presentation of the financial statements

These financial statements have been prepared in accordance with International Financial Reporting Standards as issued by the International Accounting Standards Board ("IFRS").

The financial statements for the year ended December 31, 2016 were the Group's first consolidated financial statements prepared in accordance with IFRS. The date of transition to IFRS was January 1, 2015. For all periods up to and including the year ended December 31, 2015, the Group prepared its financial statements in accordance with United States generally accepted accounting principles ("U.S. GAAP"). Accordingly, the Group's first consolidated financial statements that comply with IFRS are applicable as of December 31, 2016, together with the comparative period data for the year ended December 31, 2015.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The Company's financial statements have been prepared on a cost basis, except for certain assets and liabilities such as: financial assets measured at fair value through other comprehensive income; contingent liabilities related to business combination and other financial assets and liabilities (including derivatives) which are presented at fair value through profit or loss.

The Company has elected to present the profit or loss items using the function of expense method.

2) Use of judgments, estimates and assumptions:

The preparation of the consolidated financial statements requires management to make judgments, estimates and assumptions that have an effect on the application of the accounting policies and on the reported amounts of assets, liabilities, revenues and expenses in the financial statements. The Company's management believes that the estimates and assumptions used are reasonable based upon information available at the time they are made. These estimates and underlying assumptions are reviewed regularly. Actual results could differ from those estimates. Changes in accounting estimates are reported in the period of the change in estimate.

The judgments, estimates and assumptions which have the most significant effect on the amounts recognized in the financial statements are employed in determining values of goodwill and identifiable intangible assets and their subsequent impairment analysis, revenue recognition, timing of commitment to execution of transactions, tax assets and tax positions, legal contingencies, research and development capitalization, classification of leases, contingent consideration related to acquisitions, determining the fair value of put options of non-controlling interests, pension and other post-employment benefits and share-based compensation costs. These judgements, estimates and assumptions also impact the Company's assessment as to whether it has effective control over companies in which it holds less than the majority of the voting rights.

3) Consolidated financial statements:

The consolidated financial statements comprise the financial statements of companies that are controlled by the Company (subsidiaries). Control is achieved when the Company is exposed, or has rights, to variable returns from its involvement with the investee and has the ability to affect those returns through its power over the investee. Potential voting rights are considered when assessing whether an entity has control. The consolidation of the financial statements commences on the date on which control is obtained and ends when such control ceases.

Effective control:

In a situation where the Company holds less than a majority of voting power in a given entity, but that power is sufficient to enable the Company to unilaterally direct the relevant activities of such entity, then the control is exercised. When assessing whether voting rights held by the Company are sufficient to give it power, the Company considers all facts and circumstances, including: the amount of those voting rights relative to the amount and dispersion of other vote holders; potential voting rights held by the Company and other shareholders or parties; rights arising from other contractual arrangements; significant personal ties; and any additional facts and circumstances that may indicate that the Company has, or does not have the ability to direct the relevant activities when decisions need to be made, inclusive of voting patterns observed at previous meetings of shareholders.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2-- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The Company's management has concluded that despite the lack of absolute majority of voting power at the general meetings of shareholders of Matrix, Sapiens and Magic, in accordance with IFRS 10, these investees are controlled by the Company. The conclusion regarding the existence of control during the years ended December 31, 2016, 2017 and 2018 with respect to Matrix, Sapiens and Magic, in accordance with IFRS 10, was made in accordance with the following factors:

Sapiens:

i) Governing bodies of Sapiens:

Decisions of Sapiens' shareholders general meeting are taken by a simple majority of votes represented at the general meeting. The annual (ordinary) general meeting adopts resolutions to appoint individual directors, choose Sapiens' independent auditors for the next year, as well as approve the company's financial statements and the management's report on operations.

In accordance with Sapiens' articles of association, the board of directors of Sapiens is responsible for managing its current business operations and is authorized to take substantially all decisions which are not specifically reserved to Sapiens' shareholders by its articles of association, including the decision to pay out dividends. Sapiens' board of directors is composed of 6 members, 4 of whom are independent directors. For the last 8 years, the Company has consistently reappointed the same members of the board of directors. Likewise, the previous composition of the board of directors was re-elected during the general meeting that was held in December 2018.

ii) Shareholders structure of Sapiens:

Sapiens' shareholders structure is dispersed because, apart from the Company, just two financial institution held more than 5% of the voting rights at the general meeting (representing 5.1%, and 6.5%, of the votes, respectively). There is no evidence that any shareholders have or had granted to any other shareholder a voting proxy at the general meeting. Over the last five years from 2014 to 2018, Sapiens' general meetings were attended by shareholders representing in total between 70% and 80% of the total voting power (including the Company's share power and bearing in mind that the Company presently holds approximately 48.08% of total voting rights). This means that the level of activity of Sapiens' other shareholders is relatively moderate or low. As of December 31, 2018, the attendance from shareholders would have to be higher than 96.2% in order to deprive the Company of an absolute majority of votes at the general meeting.

In accordance with voting patterns at Sapiens' shareholders' meetings in recent years, it is the Company's management's belief that achieving such a high attendance seems unlikely.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)Magic:

i) Governing bodies of Magic:

Decisions of Magic's shareholders' general meeting are taken by a simple majority of votes represented at the general meeting. The annual (ordinary) general meeting adopts resolutions to elect individual directors, appoint Magic's independent auditors for the next year, as well as to approve Magic's financial statements and the management's report on operations.

In accordance with the Magic's articles of association, the board of directors of Magic is responsible for managing Magic's current business operations and is authorized to take substantially all decisions which are not specifically reserved to Magic shareholders by its articles of association, including the decision to pay out dividends. Magic's board of directors is composed of 5 members, 3 of whom are independent directors. In recent years, the Company has consistently reappointed mostly the same members of the board of directors. The only exception was the appointment of Mr. Avi Zakaya, who has replaced Mr. Yechezkel Zeira after nine years of service.

ii) Shareholders structure of Magic:

Magic's shareholders' structure is dispersed because, apart from the Company, as of December 31, 2018, there were just four financial institutions holding more than 5% of Magic's voting power (representing 7.4%, 6.0%, 5.9% and 5.6% of the votes, respectively). There is no evidence that any of the shareholders have or had granted to any other shareholder a voting proxy at the general meeting. Over the last five years from 2014 to 2018, Magic's general meetings were attended by shareholders representing not more than 70% of total voting rights (including the Company's share power and bearing in mind that the Company presently holds approximately 45.21% of total voting power). This means that the level of activity of Magic's other shareholders is relatively moderate or low. As of December 31, 2018, the attendance by shareholders would have to be higher than 90.4% in order to deprive the Company of an absolute majority of votes at the general meeting. In accordance with voting patterns at Magic's shareholders' meetings in recent years, it is the Company's management belief that achieving such a high attendance seems unlikely.

Matrix:

i) Governing bodies of Matrix:

Decisions of Matrix's shareholders general meeting are taken by a simple majority of votes represented at the general meeting. The annual (ordinary) general meeting adopts resolutions to elect individual directors, appoint Matrix's independent auditors for the next year, as well as approve the company's financial statements and management's report on operations. In accordance with Matrix's articles of association, the board of directors of Matrix is responsible for managing its current business operations and is authorized to take substantially all decisions which are not specifically reserved to Matrix's shareholders by its articles of association, including the decision to pay out dividends. Matrix's board of directors is composed of 5 members, 3 of whom are independent directors. For the last 5 years (i.e., 2014-2018), the Company has consistently reappointed mostly the same members of the board of directors. The only exceptions were the appointment of Ms. Yafit Keret, who has replaced Ms. Michal Leshem after nine years of service as an external director in accordance with the Companies Law, 5759-1999 and the retirement of Mr. Pinchas Grinfeld.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

ii) Shareholders' structure of Matrix:

Matrix's shareholders structure is dispersed because, apart from the Company, as of December 31, 2018 there was just one financial institution holding more than 5% of Matrix's voting power (9.0% of the votes). There is no evidence that any of the shareholders have or had granted to any other shareholder a voting proxy at the general meeting. Over the last five years from 2014 to 2018, Matrix's general meetings were attended by shareholders representing not more than between 75% and 82% of total voting rights (including the Company's share power and bearing in mind that the Company presently holds approximately 49.21% of total voting power). This means that the level of activity of Matrix's other shareholders is relatively moderate or low. As of December 31, 2018, the attendance by shareholders would have to be higher than 98.4% in order to deprive the Company of an absolute majority of votes at the general meeting. In accordance with voting patterns at Matrix's shareholders' meetings in recent years, it is the Company's management's belief that achieving such a high attendance seems unlikely.

The financial statements of the Company and of the investees, after being adjusted to comply with IFRS, are prepared for the same reporting period and using consistent accounting treatment of similar transactions and economic activities. Any discrepancies in the applied accounting policies are eliminated by making appropriate adjustments. Significant intragroup balances and transactions and gains or losses resulting from intragroup transactions are eliminated in full in the consolidated financial statements.

Non-controlling interests in subsidiaries represent the equity in subsidiaries not attributable, directly or indirectly, to a parent. Non-controlling interests are presented in equity separately from the equity attributable to the equity holders of the Company. Profit or loss and components of other comprehensive income are attributed to the Company and to non-controlling interests. Losses are attributed to non-controlling interests even if they result in a negative balance of non-controlling interests in the consolidated statement of financial position.

Changes in the share interest in a subsidiary that do not result in a loss of control are recognized as a change in equity, by adjusting the balance of the non-controlling interests against the equity attributable to the equity holders of the Company, and net of the consideration paid or received.

4) Business combinations and goodwill:

Business combinations are accounted for by applying the acquisition method. The cost of the acquisition is measured at the fair value of the consideration transferred on the acquisition date with the addition of non-controlling interests in the acquiree. In each business combination, the Company determines whether to measure the non-controlling interests in the acquiree based on their fair value on the acquisition date or at their proportionate share in the fair value of the acquiree's net identifiable assets.

Direct acquisition costs are carried to the statement of profit or loss as incurred.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

In a business combination achieved in stages, equity interests in the acquiree that had been held by the acquirer prior to obtaining control are measured at the acquisition date fair value while recognizing a gain or loss resulting from the revaluation of the prior investment on the date of achieving control.

Contingent consideration is recognized at fair value on the acquisition date and classified as a financial asset or liability in accordance with IFRS 9, "Financial Instruments". Subsequent changes in the fair value of the contingent consideration are recognized in profit or loss. If the contingent consideration is classified as an equity instrument, it is measured at fair value on the acquisition date without subsequent remeasurement.

Goodwill is initially measured at cost which represents the excess of the acquisition consideration and the amount of non-controlling interests over the net identifiable assets acquired and liabilities assumed. If the resulting amount is negative, the acquirer recognizes the resulting gain on the acquisition date without subsequent measurement.

5) Investment in joint arrangements:

Joint arrangements are arrangements in which the Company has joint control. Joint control is the contractually agreed sharing of control of an arrangement, which exists only when decisions about the relevant activities require the unanimous consent of the parties sharing control.

i. Joint ventures:

In joint ventures the parties that have joint control of the arrangement have rights to the net assets of the arrangement. A joint venture is accounted for by using the equity method.

ii. Joint operations:

In joint operations the parties that have joint control of the arrangement have rights to the assets and obligations for the liabilities relating to the arrangement. The Company recognizes in relation to its interest its share of the assets, liabilities, revenues and expenses of the joint operation.

6) Investments in associates:

Associates are companies in which the Group has significant influence over the financial and operating policies without having control. The investment in an associate is accounted for using the equity method.

7) Investments accounted for using the equity method:

The Group's investments in associates and joint ventures are accounted for using the equity method. Under the equity method, the investment in the associate or in the joint venture is presented at cost with the addition of post-acquisition changes in the Group's share of net assets, including other comprehensive income of the associate or the joint venture. Gains and losses resulting from transactions between the Group and the associate or the joint venture are eliminated to the extent of the interest in the associate or in the joint venture.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2-- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Goodwill relating to the acquisition of an associate or a joint venture is presented as part of the investment in the associate or the joint venture, measured at cost and not systematically amortized. Goodwill is evaluated for impairment as part of the investment in the associate or in the joint venture as a whole.

The financial statements of the Company and of the associate or joint venture are prepared as of the same dates and periods. The accounting policies applied in the financial statements of the associate or the joint venture are uniform and consistent with the policies applied in the financial statements of the Group.

Upon the acquisition of an associate or a joint venture achieved in stages when the former investment in the acquiree was accounted for pursuant to the provisions of IFRS 9, the Group adopts the principles of IFRS 3 regarding business combinations achieved in stages. Consequently, equity interests in the acquiree that had been held by the Group prior to achieving significant influence or joint control are measured at fair value on the acquisition date and are included in the acquisition consideration while recognizing a gain or loss resulting from the fair value measurement.

The equity method is applied until the loss of significant influence in the associate or loss of joint control in the joint venture or classification as investment held for sale.

On the date of loss of significant influence or joint control, the Group measures any remaining investment in the associate or the joint venture at fair value and recognizes in profit or loss the difference between the fair value of any remaining investment plus any proceeds from the sale of the investment in the associate or the joint venture and the carrying amount of the investment on that date.

8) Functional currency, presentation currency and foreign currency:

i. Functional currency and presentation currency:

The presentation currency of the financial statements is the U.S dollars (the "dollar"). The Group determines the functional currency of each investee, including companies accounted for at equity. The currency of the primary economic environment in which the operations of Formula and certain of its investees are conducted is the dollar, thus, the dollar is the functional and reporting currency of Formula and certain of its investees.

Assets, including fair value adjustments upon acquisition, and liabilities of an investee which is a foreign operation, are translated at the closing rate at each reporting date. Profit or loss items are translated at average exchange rates for all periods presented. The resulting translation differences are recognized in other comprehensive income (loss).

Intragroup loans for which settlement is neither planned nor likely to occur in the foreseeable future are, in substance, a part of the investment in the foreign operation and, accordingly, the exchange rate differences from these loans (net of the tax effect) are recorded in other comprehensive income (loss).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2-- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Upon the full or partial disposal of a foreign operation resulting in loss of control in the foreign operation, the cumulative gain (loss) from the foreign operation which had been recognized in other comprehensive income is transferred to profit or loss. Upon the partial disposal of a foreign operation which results in the retention of control in the subsidiary, the relative portion of the amount recognized in other comprehensive income is reattributed to non-controlling interests.

ii. Transactions, assets and liabilities in foreign currency:

Transactions denominated in foreign currency are recorded upon initial recognition at the exchange rate at the date of the transaction. After initial recognition, monetary assets and liabilities denominated in foreign currency are translated at each reporting date into the functional currency at the exchange rate at that date. Exchange rate differences, other than those capitalized to qualifying assets or accounted for as hedging transactions in equity, are recognized in profit or loss. Non-monetary assets and liabilities denominated in foreign currency and measured at cost are translated at the exchange rate at the date of the transaction. Non-monetary assets and liabilities denominated in foreign currency and measured at fair value are translated into the functional currency using the exchange rate prevailing at the date when the fair value was determined.

9) Cash equivalents:

Cash equivalents are considered highly liquid investments, including unrestricted short-term bank deposits with an original maturity of three months or less from the date of investment or with a maturity of more than three months, but which are redeemable on demand without penalty and which form part of the Group's cash management. Cash and cash equivalent includes amounts held primarily in New-Israeli Shekel, dollars, Euro, Japanese Yen, Indian Rupee and British Pound.

10) Short-term and restricted deposits:

Short-term bank deposits are deposits with an original maturity of more than three months from the date of investment and which do not meet the definition of cash equivalents. The deposits are presented according to their terms of deposit. Restricted deposits include deposits used to secure certain subsidiaries' ongoing projects and credit lines from banks, as well as security deposits with respect to leases, and are classified under other short-term and long-term receivables.

11) Allowance for doubtful accounts (applied until December 31, 2017 is as follows):

The allowance for doubtful accounts is determined in respect of specific trade receivables whose collection, in the opinion of the Group's management, is doubtful. The Group did not recognize an allowance in respect of groups of trade receivables that are collectively assessed for impairment due to immateriality. Impaired receivables are derecognized when they are assessed as uncollectible.

The bad debt expense, net for the years ended December 31, 2016 and 2017 was \$652 and \$1,373, respectively. Bad debt expense, net for the year ended December 31, 2018 was \$1,723 under the new guidance (see Note 22).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

12) Inventories:

Inventories are measured at the lower of cost and net realizable value. The cost of inventories comprises costs of purchase and costs incurred in bringing the inventories to their present location and condition. Net realizable value is the estimated selling price in the ordinary course of business less estimated costs of completion and estimated costs necessary to make the sale. Inventories are mainly comprised of purchased merchandise and products which consist of educational software kits, computers, peripheral equipment and spare parts. Cost is determined on the "first in - first out" basis.

The Group periodically evaluates the condition and aging of its inventories and makes provisions for impairment of slow moving inventories accordingly. No such impairments have been recognized in any period presented.

13) Revenue recognition:

IFRS 15, "Revenue from Contracts with Customers" (the "Standard"), issued by the IASB in May 2014, supersedes IAS 11 'Construction Contracts', IAS 18 'Revenue from contracts with customers' and related Interpretations and applies to all revenue arising from contracts with customers, unless those contracts are in the scope of other standards.

The accounting policy for revenue recognition applied until December 31, 2017, is as follows:

Revenues are recognized in profit or loss when the revenues can be measured reliably, it is probable that the economic benefits associated with the transaction will flow to the Group and the costs incurred or to be incurred in respect of the transaction can be measured reliably. Revenues are measured at the fair value of the consideration less any trade discounts, volume rebates and returns.

The following are the specific revenue recognition criteria which must be met before revenue is recognized by the Company and its subsidiaries:

i. Revenues from software solutions and services:

- a) Revenues from contracts based on actual inputs. Revenues from master agreements based on actual inputs are recognized based on actual labor hours.
- b) Outsourcing - These agreements are similar in nature to agreements that are based on actual labor hours. The Group allocates employees to projects that are generally managed by the customers at their charge based on the pricing of labor hours. Revenues are recognized based on actual labor hours.

ii. Revenues from sales, distribution and support of software products:

The Group recognizes revenues from the sale of software (i) only after the significant risks and rewards of ownership of the software have been transferred to the buyer for which a necessary condition is delivery of the software, either physically or electronically, or providing the right to use or permission to make copies of the software, (ii) the Group does not retain any continuing management involvement that is associated with ownership and does not retain the effective control of the sold software, (iii) the amount of revenues can be measured reliably, (iv) it is probable that the economic benefits associated with the transaction will flow to the Group and (v) the costs incurred or to be incurred in respect of the transaction can be measured reliably. The Group reports income on a gross basis since it acts as a principal and bears the risks and rewards derived from the transaction.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Revenue from third-party sales is recorded at a gross or net amount according to certain indicators. The application of these indicators for gross and net reporting of revenue depends on the relative facts and circumstances of each sale and requires significant judgment.

Revenues from sale agreements that do not provide a general right of return and consist of multiple elements such as hardware, service and support agreements are split into different accounting units which are separately recognized. An element only represents a separate accounting unit if and only if it has stand-alone value for the customer. Moreover, there should be reliable and objective evidence of the fair value of all the elements in the agreement or of the fair value of undelivered elements. Revenues from the various accounting units are recognized when the revenue recognition criteria are met with respect to all the elements of the accounting unit based on their specific type and only up to the amount of the consideration that is not contingent on completion or performance of the other elements in the contract.

Maintenance and support includes annual maintenance contracts providing for unspecified upgrades for new versions and enhancements on a when-and-if-available basis for an annual fee. The right for unspecified upgrades for new versions and enhancements on a when-and-if-available basis does not specify the features, functionality and release date of future product enhancements for the customer to know what will be made available and the general timeframe in which it will be delivered. Revenues from maintenance services are recognized on a straight-line basis at the relative portion of the maintenance contract that is determined for each reporting year. Revenues that have been received before the respective service has been provided are carried to deferred income. Maintenance and support revenue included in multiple element arrangements is deferred and recognized on a straight-line basis over the term of the maintenance and support agreement.

iii. Revenues from training and implementation services:

Revenues from trainings and implementations are recognized when providing the service. Revenues from training services in respect of courses conducted over a period of up to 3 months will be recognized over the period of the course. Revenues from training services in respect of courses ordered in advance and long-term or short term (for a period of up to a year) retraining courses will be recognized over the period of the course. Revenues from projects which are usually ordered by organizations will be recognized under the actual inputs by using the basis of hours actually invested in the project.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

iv. Revenues from hardware products and infrastructure solutions:

Revenues from hardware products and infrastructure solutions are recognized after all the significant risks and rewards of ownership of the products have been transferred to the buyer. The Group does not retain any continuing management involvement that is associated with ownership and does not retain the effective control of the sold products, the amount of revenues can be measured reliably, it is probable that the economic benefits associated with the transaction will flow to the Group and the costs incurred or to be incurred in respect of the transaction can be measured reliably.

The accounting policy for revenue recognition applied commencing from January 1, 2018, is as follows:

As described in Note 2 (30)(A) regarding the initial adoption of IFRS 15, the Group elected to adopt the provisions of the Standard using the modified retrospective method with the application of certain practical expedients and without restatement of comparative data.

The new standard establishes a five-step model to account for revenue arising from contracts with customers and requires entities to exercise judgement, taking into consideration all of the relevant facts and circumstances when applying each step of the model to contracts with their customers:

Step 1: Identify the contract with a customer, including reference to contract combination and accounting for contract modifications.

Step 2: Identify the separate performance obligations in the contract.

Step 3: Determine the transaction price, including reference to variable consideration, significant financing components, non-cash consideration and any consideration payable to the customer.

Step 4: Allocate the transaction price to the distinct performance obligations on a relative stand-alone selling price basis using observable information, if it is available, or using estimates and assessments.

Step 5: Recognize revenue when a performance obligation is satisfied, either at a point in time or over time.

Under IFRS 15, revenues are recognized when control of the promised goods or services are transferred to the customers in an amount that reflects the consideration that the Group expects to receive in exchange for those goods or services.

The Group enters into contracts that can include various combinations of products and software, IT services and hardware, as detailed below, which are generally capable as being distinct from each other and accounted for as separate performance obligations.

For contracts with customers that contain multiple performance obligations, the Group accounts for each individual performance obligation separately, if they are distinct from each other. The transaction price is allocated to the separate performance obligations on a relative stand-alone selling price basis.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Stand-alone selling prices of software sales are typically estimated using the residual approach due to the lack of selling software licenses on a stand-alone basis. Stand-alone selling prices of software services are typically determined by considering several external and internal factors including but not limited to, observable transactions when these services are sold on a stand-alone basis.

The following is a description of principal activities from which the Group generates its revenues:

i. Sale of proprietary licenses without significant related services

In the event in which the sale of a proprietary license (perpetual or term-based) is distinct from other significant modification or implementation services, and thereby it constitutes a separate performance obligation, the Group considers whether this performance obligation in granting the license is to provide the customer with either:

- a right to access the entity's intellectual property in the form in which it exists throughout the licensing period; or
- a right to use the entity's intellectual property in the form in which it exists at the time of granting the license

The vast majority of licenses sold separately by the Group (thus representing a separate performance obligation) are intended to provide the customer with a right to use the intellectual property, which means that revenues from the sale of such licenses are recognized at the point in time at which control of the license is transferred to the customer.

The Group recognizes revenue from software licensing transactions over time when the Group provides the customer a right to access the Group's intellectual property throughout the license period.

ii. Sale of proprietary licenses with significant related services

Revenues from contracts that include the sale of proprietary licenses with significant related services (for example, modifications, implementation or customization to customer-specific specifications) are generally accounted by the Group as performance obligations satisfied over time. In such contracts the Group is normally committed to provide the customer with a functional IT system and the customer can only benefit from such functional system, being the final product that would normally be comprised of proprietary licenses and significant related services. The Group considers that a commitment to sell a license under such performance obligation does not satisfy the criteria of being distinct, because the transfer of the license is only part of a larger performance obligation. The Group recognizes revenue from such contracts using cost based input methods, which recognizes revenue and gross profit as the work is performed based on a ratio between actual costs incurred compared to the total estimated costs for the contract. This is because, in accordance with IFRS 15, revenues may be recognized over the course of transferring control of the supplied goods and services, as long as the entity's performance does not create an asset with an alternative use to the entity, and the entity has an enforceable right to payment for performance completed to date throughout the duration of the contract. Provisions for estimated losses on uncompleted contracts are made during the period in which such losses are first determined, in the amount of the estimated loss for the entire contract.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2-- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

When appropriate, the Group also applies a practical expedient permitted under IFRS 15 whereby if the Group has a right to consideration from a customer in an amount that corresponds directly with the value to the customer of the Group's performance completed to date (for example, a service contract in which an entity bills a fixed amount for each hour of service provided), the Group may recognize revenue in the amount it is entitled to invoice. Deferred revenues, which represent a contract liability, include unearned amounts received under maintenance and support (mainly) and amounts received from customers for which revenues have not yet been recognized.

iii. Maintenance services and warranties

Post-contract support includes annual maintenance contracts providing for unspecified upgrades for new versions and enhancements on a when-and-if-available basis for an annual fee. The right for an unspecified upgrade for new versions and enhancements on a when-and-if-available basis do not specify the features, functionality and release date of future product enhancements for the customer to know what will be made available and the general timeframe in which it will be delivered.

The accounting policy regarding the recognition of post-contract support remained unchanged after the adoption of IFRS 15, as such services, in principle, constitute a separate performance obligation where the customer consumes the benefits of goods and services as they are delivered by the provider, as a consequence of which revenues are recognized over time during the service performance period.

The Group considers the post-contract support performance obligation as a distinct performance obligation that is satisfied over time, and as such, it recognizes revenue for post-contract support on a straight-line basis over the period for which technical support is contractually agreed to be provided for the software, typically twelve (12) months.

In certain cases, the Group also provides a warranty for goods and services sold (i.e. extended warranties that the scope of which is broader than just an assurance to the customer that the product/service complies with agreed-upon specifications). The Group has ascertained that such warranties granted by the Group meet the definition of service. The conclusion regarding the extended nature of a warranty is made whenever the Group contractually undertakes to repair any errors in the delivered software within a strictly specified time limit and/or when such warranty is more extensive than the minimum required by law. Under IFRS 15, the fact of granting an extended warranty indicates that the Group actually provides an additional service. As such, the Group recognizes an extended warranty as a separate performance obligation and allocates a portion of the transaction price to such service. In all cases where an extended warranty is accompanied by a maintenance service, which is even a broader category than an extended warranty itself, revenues are recognized over time because the customer consumes the benefits of such service as it is performed by the provider. If this is the case, the Group continues to allocate a portion of the transaction price to such maintenance service. Likewise, in cases where a warranty service is provided after the project completion and is not accompanied by any maintenance service, then a portion of the transaction price and analogically recognition of a portion of contract revenues will have to be deferred until the warranty service is actually fulfilled.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

iv. Sale of third-party licenses and services

Third-party licenses and services includes revenues from the sale of third-party licenses as well as from the provision of services which, due to technological or legal reasons, must be carried out by subcontractors (this applies to hardware and software maintenance and outsourcing services provided by their manufacturers). Revenues from the sale of third-party licenses are accounted for as sales of goods, which means that such revenues are recognized at the point in time at which control of the license is transferred to the customer. Concurrently, revenues from third-party services, including primarily third-party maintenance services, are recognized over time when such services are provided to the customer.

Whenever the Group is involved in the sale of third-party licenses or services, it will consider whether the Group acts as a principal or an agent; however, in most cases the conclusion is that the Group is the main party required to satisfy a performance obligation and therefore the resulting revenues are recognized in the gross amount of consideration.

v. Sale of hardware

Sale of hardware includes revenues from contracts with customers for the supply of infrastructure. In this category, revenues are recognized basically at the point in time at which control of the equipment is transferred. This does not apply to contracts in which the hardware is not delivered separately from services provided alongside, in such case the sale of hardware is part of a performance obligation involving the supply of a comprehensive system. However, such comprehensive projects are a rare practice in the Group as the sale of hardware is predominantly performed on a distribution basis.

vi. Variable consideration

In accordance with IFRS 15, if a contract consideration encompasses any amount that is variable, the Group shall estimate the amount of consideration to which it will be entitled in exchange for transferring promised goods or services to the customer, and shall include a portion or the whole amount of variable consideration in the transaction price but only to the extent that it is highly probable a significant reversal in the amount of cumulative revenue recognized will not occur when the uncertainty associated with the variable consideration is subsequently resolved.

vii. Significant financing component

When contracts involve a significant financing component, the Group adjusts the promised amount of consideration for the effects of the time value of money if the timing of payments agreed to by the parties to the contract (either explicitly or implicitly) provide the customer with a significant benefit of financing.

The Group has elected to apply the practical expedient allowed by IFRS 15 according to which it does not separate the financing component in transactions whose credit terms are less than one year and will recognize revenue in the amount of the consideration stated in the contract even if the customer pays for the goods or services subsequent to their receipt.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

viii. Costs of contracts with customers

Costs of obtaining a contract

Costs of obtaining a contract are those incremental costs incurred by the Group in order to obtain a contract with a customer that it would not have incurred if the contract had not been obtained. The Group recognizes such costs as an asset if it expects to recover those costs. Such capitalized costs of obtaining a contract shall be amortized over the period when the Group satisfies the performance obligations arising from the contract. Amortization expenses related to costs of obtaining or fulfilling a contract are included in sales and marketing expenses in the consolidated statements of profit or loss.

Commissions to sales and marketing and certain management personnel that are paid based on their attainment of certain predetermined sales or profit goals, are considered by the Group as incremental costs of obtaining a contract with a customer, and are deferred and amortized on a systematic basis, consistent with the transfer of the related performance obligations to the customer. As such, sales commissions paid for initial contracts, which are not commensurate with additional commissions paid for renewal of such contracts, are capitalized and amortized over the expected period of benefit (including expected renewals periods). Sales commissions on initial contracts, which are commensurate with additional commissions paid for the renewal of such contracts, are capitalized and then amortized correspondingly to the recognized revenue of the related initial contracts (not including expected renewals periods). Sales commissions for renewal of such initial contracts are capitalized and then amortized on a straight line basis over the related contractual renewal period. As a practical expedient, if the expected amortization period is one-year or less, the commission fee is expensed as incurred.

Costs to fulfill a contract

Costs to fulfill a contract are the costs incurred in fulfilling a contract with a customer. The Group recognizes such costs as an asset if they are not within the scope of another standard (for example, IAS 2 'Inventories', IAS 16 'Property, Plant and Equipment' or IAS 38 'Intangible Assets') and if those costs meet all of the following criteria:

- i) the costs relate directly to a contract or to an anticipated contract with a customer,
- ii) the costs generate or enhance resources of the Group that will be used in satisfying (or in continuing to satisfy) performance obligations in the future, and
- iii) the costs are expected to be recovered.

14) Government grants:

Government grants are recognized when there is reasonable assurance that the grants will be received and the Group will comply with the attached conditions. Government grants received from the Office of the Israel Innovation Authority ("IIA"), formerly the Office of the Chief Scientist ("OCS"), are recognized upon receipt as a liability if future economic benefits are expected from the research project that will result in royalty-bearing sales.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 2-- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

A liability for the loan is first measured at fair value using a discount rate that reflects a market rate of interest. The difference between the amount of the grant received and the fair value of the liability is accounted for as a Government grant and recognized as a reduction of research and development expenses. After initial recognition, the liability is measured at amortized cost using the effective interest method. Royalty payments are treated as a reduction of the liability. If no economic benefits are expected from the research activity, the grant receipts are recognized as a reduction of the related research and development expenses. In that event, the royalty obligation is treated as a contingent liability in accordance with IAS 37.

In each reporting date, the Group evaluates whether there is reasonable assurance that the liability recognized, in whole or in part, will not be repaid (since the Group will not be required to pay royalties) based on the best estimate of future sales and using the original effective interest method, and if so, the appropriate amount of the liability is derecognized against a corresponding reduction in research and development expenses. Amounts paid as royalties are recognized as settlement of the liability.

15) Debentures:

The Group accounts for outstanding principal amount of debentures as long-term liability, in accordance with IFRS 9, with current maturities classified as short-term liabilities. The Group identifies and separates equity components contains in convertible debentures by first determining the liability component, in accordance with IAS 32, based on the fair value of an equivalent non-convertible liability. The conversion component valued is being determined to be the residual amount. Debt issuance costs are capitalized and reported as deferred financing costs, which are amortized over the life of the debentures using the effective interest rate method.

16) Taxes on income:

Current or deferred taxes are recognized in profit or loss, except to the extent that they relate to items which are recognized in other comprehensive income or equity.

• Current taxes:

The current tax liability is measured using the tax rates and tax laws that have been enacted or substantively enacted by the reporting date as well as adjustments required in connection with the tax liability in respect of previous years.

• Deferred taxes:

Deferred taxes are computed in respect of temporary differences between the carrying amounts in the financial statements and the amounts attributed for tax purposes. Deferred taxes are measured at the tax rate that is expected to apply when the asset is realized or the liability is settled, based on tax laws that have been enacted or substantively enacted by the reporting date. Deferred tax assets are reviewed at each reporting date and reduced to the extent that it is not probable that they will be utilized. Deductible carryforward losses and temporary differences for which deferred tax assets had not been recognized are reviewed at each reporting date and a respective deferred tax asset is recognized to the extent that their utilization is probable.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2-- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Taxes that would apply in the event of the disposal of investments in investees have not been taken into account in computing deferred taxes, as long as the disposal of the investments in investees is not probable in the foreseeable future. Also, deferred taxes that would apply in the event of distribution of earnings by investees as dividends have not been taken into account in computing deferred taxes, since the distribution of dividends does not involve an additional tax liability or since it is the Group's policy not to initiate distribution of dividends from a subsidiary that would trigger an additional tax liability.

Taxes on income that relate to distributions of an equity instrument and to transaction costs of an equity transaction are accounted for pursuant to IAS 12.

Deferred taxes are offset if there is a legally enforceable right to offset a current tax asset against a current tax liability and the deferred taxes relate to the same taxpayer and the same taxation authority.

17) Leases:

The criteria for classifying leases as finance or operating leases depend on the substance of the agreements and are made at the inception of the lease in accordance with the following principles as set out in IAS 17.

The Group as lessee:

i. Financial leases:

A lease that transfers substantially all the risks and rewards incidental to ownership of the leased asset to the Group is classified as a finance lease. At the commencement of the lease term, the leased asset is measured at the lower of the fair value of the leased asset or the present value of the minimum lease payments. The leased asset is depreciated over the shorter of its useful life and the lease term.

ii. Operating leases:

Leases in which substantially all the risks and rewards of ownership of the leased asset are not transferred to the Group are classified as operating leases. Lease payments are recognized as an expense in profit or loss on a straight-line basis over the lease term.

18) Property, plant and equipment, net:

Property, plant and equipment are measured at cost, including directly attributable costs, less accumulated depreciation, accumulated impairment losses and any related investment grants and excluding day-to-day servicing expenses. Cost includes spare parts and auxiliary equipment that are used in connection with plant and equipment. The cost of an item of property, plant and equipment comprises the initial estimate of the costs of dismantling and removing the item and restoring the site on which the item is located.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Depreciation is calculated on a straight-line basis over the useful life of the assets at annual rates as follows:

	%
Computers, software and peripheral equipment	20-33 (mainly 33)
Office furniture and equipment	6-33 (mainly 7)
Motor vehicles	15
Buildings	2-4

Leasehold improvements are amortized using the straight-line method over the term of the lease (including option terms that are deemed to be reasonably assured) or the estimated useful life of the improvements, whichever is shorter.

The useful life, depreciation method and residual value of an asset are reviewed at least each year-end (at the end of the year) and any changes are accounted for prospectively as a change in accounting estimate. Depreciation of an asset ceases at the earlier of the date that the asset is classified as held for sale and the date that the asset is derecognized. For impairment testing of property, plant and equipment, see Note 2(21) below.

19) Research and development costs:

Research expenditures incurred in the process of software development are recognized in profit or loss when incurred. An intangible asset arising from a software development project or from the development phase of an internal project is recognized if the Group can demonstrate the technical feasibility of completing the intangible asset so that it will be available for use or sale; the Group's intention to complete the intangible asset and use or sell it; the ability to use or sell the intangible asset; how the intangible asset will generate future economic benefits; the availability of adequate technical, financial and other resources to complete the intangible asset; and the ability to measure reliably the respective expenditure asset during its development. The Group establishes technological feasibility upon completion of a detailed program design or working model.

Research and development costs incurred between completion of the detailed program design and the point at which the product is ready for general release, have been capitalized.

Capitalized software costs are measured at cost less any accumulated amortization and any accumulated impairment losses on a product by product basis. Amortization of capitalized software costs begin when development is complete and the product is available for use. The Group considers a product to be available for use when the Group completes its internal validation of the product that is necessary to establish that the product meets its design specifications including functions, features, and technical performance requirements. Internal validation includes the completion of coding, documentation and testing that ensure bugs are reduced to a minimum. The internal validation of the product takes place a few weeks before the product is made available to the market. In certain instances, The Group enters into a short pre-release stage, during which the product is made available to a select number of customers as a beta program for their own review and familiarization. Subsequently, the release is made generally available to customers. Once a product is considered available for use, the capitalization of costs ceases and amortization of such costs to "cost of sales" begins.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Capitalized software costs are amortized on a product by product basis by the straight-line method over the estimated useful life of the software product (between 5-7 years).

Research and development costs incurred in the process of developing product enhancements are generally charged to expenses as incurred.

The Group assesses the recoverability of its capitalized software costs on a regular basis by assessing the net realizable value of these intangible assets based on the estimated future gross revenues from each product reduced by the estimated future costs of completing and disposing of it, including the estimated costs of performing maintenance and customer support over its remaining economical useful life using internally generated projections of future revenues generated by the products, cost of completion of products and cost of delivery to customers over its remaining economical useful life.

During the years ended December 31, 2016, 2017 and 2018, no such unrecoverable amounts were identified.

20) Other intangible assets:

Separately-acquired intangible assets are measured on initial recognition at cost, including directly attributable costs. Intangible assets acquired in a business combination are measured at fair value at the acquisition date. Expenditures relating to internally generated intangible assets, excluding capitalized development costs, are recognized in profit or loss when incurred.

According to management's assessment, intangible assets with a finite useful life are amortized over their useful life and reviewed for impairment whenever there is an indication that the asset may be impaired. The amortization period and the amortization method for an intangible asset are reviewed at least at each year end. Other intangible assets are comprised mainly of customer-related intangible assets, backlogs, brand names, capitalized courses development costs, non-compete agreements and acquired technology and patent, and are amortized over their useful lives using a method of amortization that reflects the pattern in which the economic benefits of the intangible assets are consumed or otherwise used up. The useful life of intangible assets is as follows:

	Years
Customer relationship and backlog	1-15
Acquired technology	2-8
Brand names and patents	5-10

Gains or losses arising from the derecognition of an intangible asset are determined as the difference between the net disposal proceeds and the carrying amount of the asset and are recognized in the statement of profit or loss.

The useful life of these assets is reviewed annually to determine whether their indefinite life assessment continues to be supportable. If the events and circumstances do not continue to support the assessment, the change in the useful life assessment from indefinite to finite is accounted for prospectively as a change in accounting estimate, and on that date the asset is tested for impairment. Commencing from that date, the asset is amortized systematically over its useful life.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

21) Impairment of non-financial assets:

The Group evaluates the need to record an impairment of non-financial assets (property, plant and equipment, capitalized software costs and other intangible assets, goodwill, investments in joint venture) whenever events or changes in circumstances indicate that the carrying amount is not recoverable.

If the carrying amount of non-financial assets exceeds their recoverable amount, the assets are reduced to their recoverable amount. The recoverable amount is the higher of fair value less costs of sale and value in use. In measuring value in use, the expected future cash flows are discounted using a pre-tax discount rate that reflects the risks specific to the asset. The recoverable amount of an asset that does not generate independent cash flows is determined for the cash-generating unit to which the asset belongs. Impairment losses are recognized in profit or loss.

An impairment loss of an asset, other than goodwill, is reversed only if there have been changes in the estimates used to determine the asset's recoverable amount since the last impairment loss was recognized. Reversal of an impairment loss, as above, shall not be increased above the lower of the carrying amount that would have been determined (net of depreciation or amortization) had no impairment loss been recognized for the asset in prior years and its recoverable amount. The reversal of impairment loss of an asset presented at cost is recognized in profit or loss.

The following criteria are applied in assessing impairment of these specific assets:

i. Goodwill in respect of subsidiaries:

For the purpose of impairment testing, goodwill acquired in a business combination is allocated, at the acquisition date, to each of our cash-generating units that are expected to benefit from the synergies of the combination.

The Group reviews goodwill for impairment once a year, on December 31, or more frequently if events or changes in circumstances indicate that there is an impairment.

Goodwill is tested for impairment by assessing the recoverable amount of the cash-generating unit (or group of cash-generating units) to which the goodwill has been allocated. An impairment loss is recognized if the recoverable amount of the cash-generating unit (or group of cash-generating units) to which goodwill has been allocated is less than the carrying amount of the cash-generating unit (or group of cash-generating units). Any impairment loss is allocated first to goodwill. Impairment losses recognized for goodwill cannot be reversed in subsequent periods.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

- ii. Investment in associate or joint venture using the equity method:

After application of the equity method, the Group determines whether it is necessary to recognize any additional impairment loss with respect to the investment in associates or joint ventures. The Group determines at each reporting date whether there is objective evidence that the carrying amount of the investment in the associate or the joint venture is impaired. The test of impairment is carried out with reference to the entire investment, including the goodwill attributed to the associate or the joint venture.

During the years ended December 31, 2016, 2017 and 2018, no impairment indicators were identified.

22) Financial instruments:

As described in Note 2 (30)(B) regarding the initial adoption of IFRS 9, "Financial Instruments" (the "Standard"), the Group elected to adopt the provisions of the Standard retrospectively without restatement of comparative data.

The accounting policy for financial instruments applied until December 31, 2017 is as follows:

A. Financial assets:

Financial assets within the scope of IAS 39 are initially recognized at fair value plus directly attributable transaction costs, except for financial assets measured at fair value through profit or loss in respect of which transaction costs are recorded in profit or loss. After initial recognition, the accounting treatment of financial assets is based on their classification as follows:

- i. Financial assets at fair value through profit or loss:

This category includes financial assets held for trading and a dividend preference derivative in TSG (for a description of the TSG derivative, see Note 8).

- ii. Loans and receivables:

Loans and receivables are investments with fixed or determinable payments that are not quoted in an active market. After initial recognition, loans are measured based on their terms at amortized cost plus directly attributable transaction costs using the effective interest method and less any impairment losses. Short-term borrowings are measured based on their terms, normally at face value.

- iii. Available-for-sale financial assets:

Available-for-sale financial assets are (non-derivative) financial assets that are designated as available for sale or are not classified in any of the three preceding categories. After initial recognition, available-for-sale financial assets are measured at fair value. Gains or losses from fair value adjustments, except for interest, exchange rate differences that relate to debt instruments and dividends from an equity instrument, are recognized in other comprehensive income. When the investment is disposed of or in case of impairment, the other comprehensive income (loss) is transferred to profit or loss.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

B. Financial liabilities:

Financial liabilities are initially recognized at fair value. Loans and other liabilities measured at amortized cost are presented less direct transaction costs. After initial recognition, the accounting treatment of financial liabilities is based on their classification as follows:

i. Financial liabilities at amortized cost:

After initial recognition, loans and other liabilities are measured based on their terms at amortized cost less directly attributable transaction costs using the effective interest method.

ii. Financial liabilities at fair value through profit or loss:

Financial liabilities at fair value through profit or loss include financial liabilities classified as held for trading and financial liabilities designated upon initial recognition as at fair value through profit or loss. Derivatives, including separated embedded derivatives, are classified as held for trading unless they are designated as effective hedging instruments.

C. Offsetting financial instruments:

Financial assets and financial liabilities are offset and the net amount is presented in the statement of financial position if there is a legally enforceable right to set off the recognized amounts and there is an intention either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The right of set-off must be legally enforceable not only during the ordinary course of business of the parties to the contract but also in the event of bankruptcy or insolvency of one of the parties. In order for the right of set-off to be currently available, it must not be contingent on a future event, there may not be periods during which the right is not available, or there may not be any events that will cause the right to expire.

D. Compound financial instruments:

i. Convertible debentures which contain both an equity component and a liability component are separated into two components. This separation is performed by first determining the liability component based on the fair value of an equivalent non-convertible liability. The value of the conversion component is determined to be the residual amount. Directly attributable transaction costs are apportioned between the equity component and the liability component based on the allocation of proceeds to the equity and liability components.

ii. Convertible debentures that are denominated in foreign currency contain two components: the conversion component and the debt component. The liability conversion component is initially recognized as a financial derivative at fair value. The balance is attributed to the debt component. Directly attributable transaction costs are allocated between the liability conversion component and the liability debt component based on the allocation of the proceeds to each component.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

E. Embedded derivatives:

The Group assesses the existence of an embedded derivative and whether it is required to be separated from a host contract when the Group first becomes party to the contract. Reassessment of the need to separate an embedded derivative only occurs if there is a change in the terms of the contract that significantly modifies the cash flows that would otherwise be required.

F. Put option granted to non-controlling interests:

When the Group grants to non-controlling interests a put option to sell part or all of their interests in a subsidiary, during a certain period, even if such purchase obligation is conditional on the counterparty's exercise of its contractual right to cause such redemption, if the put option agreement does not transfer to the Group any benefits incidental to ownership of the equity instrument (i.e. the Group does not have a present ownership in the shares concerned), then at the end of each reporting period the non-controlling interests (to which a portion of net profit attributable to non-controlling interests is allocated) are classified as a financial liability, as if such put-able equity instrument was redeemed on that date. The difference between the non-controlling interests carrying amount at the end of the reporting period and the present value of the liability is recognized directly in equity of the Group, under "Additional paid-in capital".

The Group remeasures the financial liability at the end of each reporting period based on the estimated present value of the consideration to be transferred upon the exercise of the put option.

If the option is exercised in subsequent periods, the consideration paid upon exercise is treated as settlement of the liability. If the option expires, the liability is settled and it is a portion of the investment in the subsidiary disposed of, without loss of control therein.

If the Group has present ownership in the shares concerned, these non-controlling interests are accounted for as if they are held by the Group and changes in the amount of the liability are carried to profit or loss.

G. Derecognition of financial instruments:

i. Financial assets:

A financial asset is derecognized when the contractual rights to the cash flows from the financial asset expire or the Group has transferred its contractual rights to receive cash flows from the financial asset or assumes an obligation to pay the cash flows in full without material delay to a third party, and, in addition it has transferred substantially all the risks and rewards of the asset, or has neither transferred nor retained substantially all the risks and rewards of the asset, but has transferred control of the asset.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

A transaction involving factoring of accounts receivable and credit card vouchers is derecognized when the above-mentioned conditions are met.

If the Group transfers its rights to receive cash flows from an asset and neither transfer nor retains substantially all the risks and rewards of the asset nor transfers control of the asset, a new asset is recognized to the extent of the Group's continuing involvement in the asset. When continuing involvement takes the form of guaranteeing the transferred asset, the extent of the continuing involvement is the lower of the original carrying amount of the asset and the maximum amount of consideration received that the Group could be required to repay. As of December 31, 2017, the Group has no open factoring transactions.

ii. Financial liabilities:

A financial liability is derecognized when it is extinguished, that is when the obligation is discharged or cancelled or expires. A financial liability is extinguished when the debtor (the Group) discharges the liability by paying in cash, other financial assets, goods or services or is legally released from the liability.

H. Impairment of financial assets:

The Group assesses at the end of each reporting period whether there is any objective evidence of impairment of a financial asset or group of financial assets as follows:

i. Financial assets carried at amortized cost:

Objective evidence of impairment exists when one or more events that have occurred after initial recognition of the asset have a negative impact on the estimated future cash flows. The amount of the loss recorded in profit or loss is measured as the difference between the asset's carrying amount and the present value of estimated future cash flows (excluding future credit losses that have not yet been incurred) discounted at the financial asset's original effective interest rate. If the financial asset has a variable interest rate, the discount rate is the current effective interest rate. In a subsequent period, the amount of the impairment loss is reversed if the recovery of the asset can be related objectively to an event occurring after the impairment was recognized. The amount of the reversal, up to the amount of any previous impairment, is recorded in profit or loss.

ii. Available-for-sale financial assets:

For equity instruments classified as available-for-sale financial assets, evidence of impairment includes a significant or prolonged decline in the fair value of the asset below its cost and evaluation of changes in the technological, economic or legal environment or in the market in which the issuer of the instrument operates. The determination of a significant or prolonged impairment depends on the circumstances at each reporting date. In making such a determination, historical volatility in fair value is considered, as well as a decline in fair value of 20% or more, or a decline in fair value whose duration is six months or more. Where there is evidence of impairment, the cumulative loss recorded in other comprehensive income is reclassified to profit or loss. In subsequent periods, any reversal of the impairment loss is recognized in other comprehensive income.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

During 2016 and 2017 the Group did not recognize an impairment charge over its investments in available-for-sale marketable securities.

The accounting policy for financial instruments applied commencing from January 1, 2018, is as follows:

A. Financial assets:

Financial assets within the scope of the Standard, are measured at the date of initial recognition at their fair value, plus transaction costs that can be directly attributed to the acquisition of the financial asset, except in the case of a financial asset measured at fair value through profit or loss, in respect of which, transaction costs are charged to profit or loss.

The Group classifies and measures the debt instruments in its financial statements on the basis of the following criteria:

- the Group's business model for the management of financial assets; and
- the contractual cash flow characteristics of the financial asset.

i. The Group measures debt instruments at amortized cost when:

The Group's business model is the holding of financial assets in order to collect contractual cash flows, and the contractual terms of the financial asset provide entitlement on defined dates to cash flows, that are only principal and interest payments in respect of the amount of the principal, that has not yet been repaid. Subsequent to initial recognition, instruments in this group shall be presented at their cost at cost plus transaction costs directly using the amortized cost method. In addition, on the date of initial recognition, an entity may irrevocably designate a debt instrument at fair value through profit or loss, if such designation eliminates or significantly reduces inconsistencies in measurement or recognition, for example, if the related financial liabilities, are also measured at fair value through profit or loss.

ii. The Group measures debt instruments at fair value through other comprehensive income when:

The Group's business model is the holding of financial assets in order to collect contractual cash flows and the sale of the financial assets, and the contractual terms of the financial asset provide entitlement on defined dates to cash flows that are only principal and interest payments in respect of the amount of the principal that has not yet been repaid. Subsequent to initial recognition, instruments in this group are measured at fair value. Gains or losses arising from adjustments to fair value, other than interest and exchange rate differentials, are recognized in other comprehensive income.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

iii. The Group measures debt instruments at fair value through profit or loss when:

A financial asset which is a debt instrument does not meet the criteria for measurement at amortized cost or at fair value through other comprehensive income. After initial recognition, the financial asset is measured at fair value and gains or losses from fair value adjustments are recognized in profit or loss.

B. Impairment of financial assets:

The Group examines at each reporting date the provision for loss in respect of financial debt instruments that are not measured at fair value through profit or loss. The Group distinguishes between two situations of recognition of a provision for loss:

- i. Debt instruments for which there has been no significant deterioration in the quality of their credit since the initial recognition or in cases where the credit risk is low – in this situation, the provision for loss recognized for this debt instrument will take into account expected credit losses in a period of 12 months after the reporting date;
- ii. Debt instruments whose credit quality has deteriorated significantly since their initial recognition and for which the credit risk is not low – in this situation, the provision for a loss to be recognized will take into account projected credit losses - over the remaining life of the instrument.

The Group has financial assets with short credit periods, such as customers, for which it applies the relief prescribed in the model. In other words, the Group measures the provision for loss in an amount equal to expected credit losses throughout the life of the instrument.

Impairment in respect of debt instruments measured at amortized cost, will be carried to profit or loss against provision, while impairment in respect of debt instruments measured at fair value through other comprehensive income, will be carried to profit or loss against other comprehensive income, and will not reduce the book value of the financial asset in the statement of financial position.

The Group implements the relief prescribed in the Standard, according to which it assumes that the credit risk of a debt instrument that did not increase significantly from the date of initial recognition if it was determined at the reporting date that the instrument has a low credit risk, for example when the instrument has an external rating of “investment grade”.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

C. Derecognition of financial assets:

The Group derecognizes a financial asset when and only when:

- i. The contractual rights to the cash flows from the financial asset expire; or
- ii. The Group transfers substantially all the risks and rewards deriving from the contractual rights to receive the cash flows from the financial asset or when some of the risks and rewards of transferring the financial asset remain with the entity but it may be said that it transferred control over the asset; or
- iii. The Group retains the contractual rights to receive the cash flows arising from the financial asset but assumes a contractual obligation to pay these cash flows in full to a third party, without material delay.

D. Financial liabilities:

i. Financial liabilities measured at amortized cost:

Financial liabilities are initially recognized at fair value less transaction costs that are directly attributable to the issue of the financial liability. After initial recognition, the Group measures all financial liabilities at amortized cost using the effective interest rate method, except for:

- Financial liabilities at fair value through profit or loss, such as derivatives;
- Financial liabilities that arise when a transfer of a financial asset does not qualify for derecognition or when the continuing involvement approach applies;
- Financial guarantee contracts;
- Contingent consideration recognized by an acquirer in a business combination as to which IFRS 3 applies.

ii. Financial liabilities measured at fair value through profit or loss:

At initial recognition, the Group measures financial liabilities that are not measured at amortized cost at fair value. Transaction costs are recognized in profit or loss. After initial recognition, changes in fair value are recognized in profit or loss.

E. Derecognition of financial liabilities:

A financial liability is derecognized when it is extinguished, that is, when the obligation is discharged or cancelled or expires. A financial liability is extinguished when the debtor discharges the liability by paying in cash, other financial assets, goods or services or is legally released from the liability.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

When there is a modification in the terms of an existing financial liability, the Group evaluates whether the modification is substantial.

If the terms of an existing financial liability are substantially modified, such modification is accounted for as an extinguishment of the original liability and the recognition of a new liability. The difference between the carrying amounts of the above liabilities is recognized in profit or loss.

If the modification is not substantial, the Group recalculates the carrying amount of the liability by discounting the revised cash flows at the original effective interest rate and any resulting difference is recognized in profit or loss.

When evaluating whether the modification in the terms of an existing liability is substantial, the Group considers both quantitative and qualitative factors

F. Offsetting financial instruments:

Financial assets and financial liabilities are offset and the net amount is presented in the statement of financial position if there is a legally enforceable right to set off the recognized amounts and there is an intention either to settle on a net basis or to realize the asset and settle the liability simultaneously.

The right of set-off must be legally enforceable not only during the ordinary course of business of the parties to the contract but also in the event of bankruptcy or insolvency of one of the parties. In order for the right of set-off to be currently available, it must not be contingent on a future event, there may not be periods during which the right is not available, or there may not be any events that will cause the right to expire.

G. Put option granted to non-controlling interests:

When the Group grants to non-controlling interests a put option to sell part or all of their interests in a subsidiary, during a certain period, even if such purchase obligation is conditional on the counterparty's exercise of its contractual right to cause such redemption, if the put option agreement does not transfer to the Group any benefits incidental to ownership of the equity instrument (i.e. the Group does not have a present ownership in the shares concerned) then at the end of each reporting period the non-controlling interests (to which a portion of net profit attributable to non-controlling interests is allocated) are classified as a financial liability, as if such put-able equity instrument was redeemed on that date. The difference between the non-controlling interests carrying amount at the end of the reporting period and the present value of the liability is recognized directly in equity of the Group, under "Additional paid-in capital".

The Group remeasures the financial liability at the end of each reporting period based on the estimated present value of the consideration to be transferred upon the exercise of the put option.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

If the option is exercised in subsequent periods, the consideration paid upon exercise is treated as settlement of the liability. If the option expires, the liability is settled and it is a portion of the investment in the subsidiary disposed of, without loss of control therein.

If the Group has present ownership of the non-controlling interests, these non-controlling interests are accounted for as if they are held by the Group, and changes in the amount of the liability are carried to profit or loss.

23) Fair value measurement:

Fair value is the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Fair value measurement is based on the assumption that the transaction will take place in the asset's or the liability's principal market, or in the absence of a principal market, in the most advantageous market.

The fair value of an asset or a liability is measured using the assumptions that market participants would use when pricing the asset or liability, assuming that market participants act in their economic best interest. Fair value measurement of a non-financial asset takes into account a market participant's ability to generate economic benefits by using the asset in its highest and best use or by selling it to another market participant that would use the asset in its highest and best use. The Group uses valuation techniques that are appropriate in the circumstances and for which sufficient data are available to measure fair value, maximizing the use of relevant observable inputs and minimizing the use of unobservable inputs.

All assets and liabilities measured at fair value or for which fair value is disclosed are categorized into levels within the fair value hierarchy based on the lowest level input that is significant to the entire fair value measurement:

Level 1 - quoted prices (unadjusted) in active markets for identical assets or liabilities.

Level 2 - inputs other than quoted prices included within Level 1 that are observable directly or indirectly.

Level 3 - inputs that are not based on observable market data (valuation techniques which use inputs that are not based on observable market data).

24) Treasury shares:

Company shares held by the Company and/or subsidiaries are recognized at cost of purchase and presented as a deduction from equity. Any gain or loss arising from a purchase, sale, issue or cancellation of treasury shares is recognized directly in equity.

25) Provisions:

A provision in accordance with IAS 37 is recognized when the Group has a present obligation (legal or constructive) as a result of a past event, it is probable that an outflow of resources embodying economic benefits will be required to settle the obligation and a reliable estimate can be made of the amount of the obligation. If the effect is material, provisions are measured according to the estimated future cash flows discounted using a pre-tax interest rate that reflects the market assessments of the time value of money and, where appropriate, those risks specific to the liability. When the Group expects part or all of the expense to be reimbursed, for example under an insurance contract, the reimbursement is recognized as a separate asset but only when the reimbursement is virtually certain. The expense is recognized in the statement of profit or loss net of any reimbursement.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Following are the types of provisions included in the financial statements:

i. Legal claims:

A provision for claims is recognized when the Group has a present legal or constructive obligation as a result of a past event, it is more likely than not that an outflow of resources embodying economic benefits will be required by the Group to settle the obligation and a reliable estimate can be made of the amount of the obligation.

ii. Contingent liability recognized in a business combination:

A contingent liability in a business combination is measured at fair value upon initial recognition. In subsequent periods, it is measured at the higher of the amount initially recognized less, when appropriate, cumulative amortization, and the amount that would be recognized at the end of the reporting period in accordance with IAS 37.

26) Derivative financial instruments and hedging:

The Group enters into contracts for derivative financial instruments such as forward currency contracts and options contracts to hedge risks associated with foreign exchange rates resulting from international activities and interest rate fluctuations. The derivative instruments primarily hedge or offset exposures to Euro, Japanese Yen and New Israeli Shekel ("NIS") exchange rate fluctuations.

The Group's options and forward contracts do not qualify for hedging accounting. Any gains or losses arising from changes in the fair values of the derivatives are recorded immediately in profit or loss as financial income or expense.

27) Employee benefit liabilities:

The Group has several employee benefit plans:

i. Short-term employee benefits:

Short-term employee benefits are benefits that are expected to be settled wholly before twelve months after the end of the annual reporting period in which the employees render the related services. These benefits include salaries, paid annual leave, paid sick leave, recreation and social security contributions and are recognized as expenses as the services are rendered. A liability in respect of a cash bonus or a profit-sharing plan is recognized when the Group has a legal or constructive obligation to make such payment as a result of past service rendered by an employee and a reliable estimate of the amount can be made.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

ii. Post-employment benefits:

The plans are normally financed by contributions to insurance companies and classified as defined contribution plans or as defined benefit plans.

Formula's and its Israeli investees' (as defined with respect to their Israeli employee contribution plans pursuant to section 14 of Israel's Severance Pay Law, 1963 (the "Severance Pay Law")) pay fixed contributions to those plans and will have no legal or constructive obligation to pay further contributions if the fund into which those contributions are paid does not hold sufficient amounts to pay all employee benefits relating to employee service in the current and prior periods. Contributions to the defined contribution plan in respect of severance or retirement pay are recognized as an expense when contributed concurrently with performance of the employee's services.

Formula and its Israeli investees also operate a defined benefit plan in respect of severance pay to their Israeli employees pursuant to the Severance Pay Law. According to the Severance Pay Law, employees are entitled to severance pay upon dismissal or retirement. The liability for termination of employment is measured using the projected unit credit method. The actuarial assumptions include rates of employee turnover and future salary increases based on the estimated timing of payment. The amounts are presented based on discounted expected future cash flows using a discount rate determined by reference to market yields at the reporting date on high quality corporate bonds that are linked to Israel's Consumer Price Index with a term that is consistent with the estimated term of the severance pay obligation.

In respect of its severance pay obligation to certain of its employees, the Group makes current deposits in pension funds and insurance companies (the "plan assets"). Plan assets comprise assets held by a long-term employee benefit fund or qualifying insurance policies. Plan assets are not available to the Group's own creditors and cannot be returned directly to the Group.

The liability for employee benefits shown in the statement of financial position reflects the present value of the defined benefit obligation, less the fair value of the plan assets. Remeasurements of the net liability are recognized in other comprehensive income in the period in which they occur.

Total expenses in respect of employee benefit liabilities for the years 2016, 2017 and 2018 were \$29,557, \$35,036 and \$30,941, respectively.

28) Earnings per share:

Earnings per share are calculated by dividing the net income attributable to equity holders of the Company by the weighted number of ordinary shares outstanding during the period. Potential ordinary shares are included in the computation of diluted earnings per share when their conversion decreases earnings per share from continuing operations. Potential ordinary shares that are converted during the period are included in diluted earnings per share only until the conversion date and from that date in basic earnings per share. The Company's share of earnings of investees is included based on its share of earnings per share of the investees multiplied by the number of shares held by the Company.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

29) Concentration of credit risk:

Financial instruments that potentially subject the Group to concentrations of credit risk consist principally of cash and cash equivalents, short-term bank deposits, restricted cash, trade receivables, marketable securities and foreign currency derivative contracts.

The majority of the Group's cash and cash equivalents, bank deposits and marketable securities are invested with major banks in Israel, the United States and Europe. Management believes that these financial instruments are held in financial institutions with high credit standing, and accordingly, minimal credit risk exists with respect to these investments. Cash and cash equivalents and short-term deposits in the United States may be in excess of insured limits and are not insured in other jurisdictions. Generally, these banks deposits may be redeemed upon demand and therefore bear minimal risk.

The Group's marketable securities include investments in commercial and government bonds and foreign banks. The Group's marketable securities are considered to be highly liquid and have a high credit standing. In addition, managements of the Group's investees limit the amount that may be invested in any one type of investment or issuer, thereby reducing credit risk concentrations and consider their portfolios in foreign banks to be well-diversified (also refer to Note 5).

The Group's trade receivables are generally derived from sales to large organizations located mainly in Israel, North America, Europe and Asia Pacific. The Group performs ongoing credit evaluations of its customers and to date has not experienced any material losses. In certain circumstances, Formula and its investees may require letters of credit, other collateral or additional guarantees. From time to time, the Group's subsidiaries sell certain of its accounts receivable to financial institutions, within the normal course of business.

The Group maintains an allowance for doubtful accounts receivable based upon management's experience and estimate of collectability of each outstanding invoice. The allowance for doubtful accounts is determined with respect to specific debts or which collection is doubtful. The risk of collection associated with accounts receivable is mitigated by the diversity and number of customers.

From time to time, the Group enters into foreign exchange forward and option contracts intended to protect against the changes in value of forecasted non-dollar currency cash flows. These derivative instruments are designed to offset a portion of the Group's non-dollar currency exposure (see Note 2 (26) above).

30) Changes in accounting policies - initial adoption of new financial reporting and accounting standards:

A. First time implementation of IFRS 15 – Revenue from Contracts with Costumers:

The Group adopted IFRS 15 (or the "Standard") on January 1, 2018 and elected to apply the modified retrospective approach with the cumulative effect recognized as an adjustment to the opening retained earnings balance of \$874 as of January 1, 2018. The Group applied a practical expedient allowed under IFRS 15 and exempt from the restatement of comparable data. This means that financial data reported for reporting periods prior to December 31, 2017 has been prepared on the basis of the following standards: IAS 18 'Revenue', IAS 11 'Construction Contracts' as well as interpretations related to revenue recognition that were applicable before the effective date of IFRS 15. Results for reporting periods beginning after January 1, 2018 are presented in accordance with IFRS 15.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

The effects of the initial application of the new Standard on the Group's financial statements are as follows:

- i) Term license - under the legacy revenue standard, the Group recognized both the revenue from sale of term license (which does not involve significant customization) and post-contract support revenues ratably over the contract period whereas upon application of the provisions of the new Standard, term license revenues are recognized up front, upon delivery, and the associated post-contract support revenues are recognized over the contract period. As a result, under the provisions of the new standard, the Group recognizes these revenues in earlier period than the period these revenues were recognized under the old Standard.
- ii) Incremental costs incurred to obtain contracts (mainly due to sales commissions) - under the legacy revenue standard, the Group recognized these costs in selling and marketing expenses when incurred, whereas upon application of the provisions of the new Standard, these costs are recognized as an asset and amortized over the period when the Group satisfies the performance obligations defined in the specific contract which exceeds one year. As a result, under the provisions of the new Standard, the Group recognizes these costs as expenses in periods later than the period these costs were recognized under the old standard.

The effects of the above changes on the consolidated statements of financial position are as follows:

As of January 1, 2018

	<u>As previously reported</u>	<u>The change</u>	<u>According to IFRS 15</u>
Current Assets			
Trade receivables	385,778	20	385,798
Prepaid expenses and other accounts receivable	44,904	629	45,533
Current Liabilities			
Deferred revenues	58,905	(1,397)	57,508
Long-term Liabilities			
Other long-term liabilities	7,244	231	7,475
Equity			
Retained earnings	239,156	874	240,030
Non-controlling interests	413,720	941	414,661

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

As of December 31, 2018

	According to the previous accounting policy	The change	As presented in these financial statements
Current Assets			
Trade receivables	439,685	1,783	441,468
Prepaid expenses and other accounts receivable	41,668	(1,271)	40,397
Long-term Assets			
Prepaid expenses and other accounts receivable	21,475	1,646	23,121
Current Liabilities			
Deferred revenues	64,062	(4,553)	59,509
Other accounts payable	53,707	262	53,969
Current Liabilities			
Other long-term liabilities	8,628	106	8,734
Equity			
Retained earnings	259,538	3,019	262,557
Non-controlling interests	434,443	3,324	437,767

The effects of the above changes on the consolidated statements of profit or loss are as follows:

Year ended December 31, 2018:

	According to the previous accounting policy	The change	As presented in these financial statements
Revenues	1,488,378	4,610	1,492,988
Selling, marketing, general and administrative expenses	182,527	(55)	182,472
Taxes on income	24,164	137	24,301
Net income attributable to equity holders of the Company	30,220	2,145	32,365
Net income attributable to non-controlling interests	42,647	2,383	45,030

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Remaining performance obligations represent contracted revenue that has not yet been recognized, which includes deferred revenue and amounts that will be invoiced and recognized as revenue in future periods. The Group elected to apply a practical expedient permitted under IFRS 15 whereby it does not disclose the aggregate amount of consideration allocated to unsatisfied or partially unsatisfied performance obligations that are part of contracts that have an original expected duration of less than one year. In addition, the Group has elected to apply a practical expedient permitted under IFRS 15 whereby it does not disclose the aggregate amount of consideration allocated to unsatisfied or partially unsatisfied performance obligations for which the Group has a right to consideration from a customer in an amount that corresponds directly with the value to the customer of the Group's performance completed to date (for example, a service contract in which an entity bills a fixed amount for each hour of service provided).

As such, the aggregate amount of consideration allocated to performance obligations either not satisfied or partially unsatisfied from fixed price projects and post contract support services was approximately \$94,433 as of December 31, 2018. The Group expects to recognize approximately 58% in 2019 from remaining performance obligations as of December 31, 2018 and the remainder thereafter. Remaining performance obligations include the remaining non-cancelable, committed and fixed portion of these contracts for their entire duration.

Contract balances:

The following table provides information about trade receivables, contract assets (unbilled receivables) and contract liabilities (deferred revenues) from contracts with customers (in thousands):

	December 31,	
	2018	2017
Trade receivables	\$ 362,853	\$ 322,325
Unbilled receivables	78,615	63,453
Long-term trade receivables ^(*)	3,932	950
Advances and deferred revenues	(59,509)	(58,905)
Long-term deferred revenues	(4,906)	(9,340)

(*) Included in long-term prepaid expenses and other accounts receivable

Trade receivable are recorded when the right to consideration becomes unconditional, and an invoice is issued to the customer. Unbilled receivables relate to the Group's contractual right to consideration for services performed and not yet invoiced.

Billing terms and conditions generally vary by contract type. Amounts are billed as work progresses in accordance with agreed-upon contractual terms, either at periodic intervals (e.g., monthly or quarterly) or upon achievement of contractual milestones.

No impairment loss was recognized in respect of the Group's outstanding contract assets during the year ended December 31, 2018.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 2:- SIGNIFICANT ACCOUNTING POLICIES (Cont.)

Deferred revenues represent contract liabilities, and include unearned amounts received under contracts with customers and not yet recognized as revenues.

B. First time implementation of IFRS 9 – Financial Instruments

In July 2014, the IASB issued the final and complete version of IFRS 9 - Financial Instruments (“IFRS 9”), which replaces IAS 39 - Financial Instruments: Recognition and Measurement. IFRS 9 mainly changes the provisions of the classification and measurement of financial assets and applies to all financial assets within the scope of IAS 39. The new standard is first implemented in these financial statements. The new standard is applied retrospectively without restatement of comparative figures.

After examining the implications of implementing the new standard, Group has determined that its implementation did not have a material effect on the Group’s financial statements.

31) Certain amounts in the prior years’ financial statements have been reclassified to conform to the current year’s presentation.

NOTE 3:- NEW STANDARDS, INTERPRETATIONS AND AMENDMENTS ADOPTED BY THE GROUP

1. Amendments to IFRS 10 and IAS 28 regarding sale or transfer of assets between an investor and its associate or joint venture:

In September 2014, the IASB adopted amendments to IFRS 10 and IAS 28 (which we refer to as the Amendments) regarding the accounting treatment of the sale or transfer of assets (an asset, a group of assets or a subsidiary) between an investor and its associate or joint venture.

Under the Amendments, when an investor loses control of a subsidiary or a group of assets that are not a business in a transaction with its associate or joint venture, the gain will be partially eliminated such that the gain to be recognized is the gain from the sale to the other investors in the associate or joint venture. According to the Amendments, if the remaining rights held by the investor represent a financial asset as defined in IFRS 9, the gain will be recognized in full.

If the transaction with an associate or joint venture involves loss of control of a subsidiary or a group of assets that are a business, the gain will be recognized in full.

The Amendments are to be applied prospectively. A mandatory effective date has not yet been determined by the IASB, but early adoption is permitted.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 3-- NEW STANDARDS, INTERPRETATIONS AND AMENDMENTS ADOPTED BY THE GROUP (Cont.)

2. **IFRS 16, "Leases":**

In January 2016, the IASB issued IFRS 16, "Leases" (which we refer to as IFRS 16). According to IFRS 16, a lease is a contract, or part of a contract, that conveys the right to use an asset for a period of time in exchange for consideration.

Under IFRS 16:

- Lessees are required to recognize an asset and a corresponding liability in the statement of financial position in respect of all leases (except in certain cases) similar to the accounting treatment of finance leases according to the existing IAS 17, "Leases". Lessees are required to initially recognize a lease liability for the obligation to make lease payments and a corresponding right-of-use asset. Lessees will also recognize interest and depreciation expense separately.
- Variable lease payments that are not dependent on changes in the Consumer Price Index, or CPI, or interest rates, but are based on performance or use (such as a percentage of revenues) are recognized as an expense by the lessees as incurred and recognized as income by the lessors as earned.
- In the event of change in variable lease payments that are CPI-linked, lessees are required to remeasure the lease liability and the effect of the remeasurement is an adjustment to the carrying amount of the right-of-use asset.
- IFRS 16 includes two exceptions according to which lessees are permitted to elect to apply a method similar to the current accounting treatment for operating leases. These exceptions are leases for which the underlying asset is of low value and leases with a term of up to one year.
- The accounting treatment by lessors remains substantially unchanged, namely classification of a lease as a finance lease or an operating lease.

IFRS 16 is effective for annual periods beginning on or after January 1, 2019, and the Group expects its adoption to have a material impact on its consolidated statements of financial position.

IFRS 16 permits lessees to use one of the following approaches:

1. Full retrospective approach - according to this approach, a right-of-use asset and the corresponding liability will be recorded in the statement of financial position as if they had always been measured according to the provisions of IFRS 16, with the effect of the adoption at the beginning of the earliest period presented will be recorded in equity.
2. Modified retrospective approach - this approach does not require restatement of comparative data. The balance of the liability as of the date of initial application of IFRS 16 will be calculated using the lessee's incremental borrowing rate of interest on the date of the initial application of IFRS 16. As for the measurement of the right-of-use asset, the Group may choose, on a lease-by-lease basis, to apply one of the two following alternatives:

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 3-- NEW STANDARDS, INTERPRETATIONS AND AMENDMENTS ADOPTED BY THE GROUP (Cont.)

- i) Recognize an asset in an amount equal to the lease liability, with certain adjustments.
- ii) Recognize an asset as if IFRS 16 had always been applied.

The Group believes that it will apply the modified retrospective approach upon the initial adoption of IFRS 16, whereby the right-of-use asset in certain real-estate leases will be measured as if the new standard had always been applied, while the right-of-use assets in respect of other leases will be measured at an amount equal to the lease liability, as measured on the transition date.

The Group has leases mainly of real estate and vehicles in a significant amount. In assessing the impact of IFRS 16 on the financial statements, the Group is evaluating the following matters:

Options to extend the lease - In accordance with IFRS 16, the non-cancellable periods of leases include periods that are covered by options to extend the leases if the lessees are reasonably certain to exercise the option. The Group is reviewing whether such options exist in its lease agreements and whether it is reasonably certain that it will exercise the options. As part of its assessment, the Group is evaluating all relevant facts and circumstances that create an economic incentive to exercise the options, including significant leasehold improvements that have been or are expected to be undertaken, the importance of the underlying assets to the Group's operations and past experience in connection with the exercise of such options.

Separation of contract components - In accordance with IFRS 16, all lease components within a contract should be accounted for separately from non-lease components. A lessee is allowed a practical expedient according to which it can elect, by class of underlying asset, not to separate non-lease components from lease components, and instead account for them as a single lease component. The Group is reviewing whether such non-lease components, such as management and maintenance services, exist in its current lease contracts and whether the above practical expedient should be applied to each class of underlying asset.

Interest on capitalization - the Group is estimating the incremental interest rate to be used for measuring its lease liabilities and right-of-use assets on the date of initial adoption of IFRS 16, based on the leases' terms and nature of the leased assets.

The Group is also evaluating the need for making adjustments to its information systems, internal controls, policies and procedures that will be necessary in order to apply the provisions of IFRS 16.

The Group estimates that the effect of the initial implementation of IFRS 16 as of January 1, 2019 is expected to result in an increase in the Group's total assets in an amount of approximately \$108,800 an increase in the Group's total liabilities in an amount of approximately \$111,100 and a decrease in the balance of the Company's shareholders' equity in an amount of \$2,300.

The Group estimates that the implementation of the new standard will not have an impact on the Group's compliance with the financial covenants under the Group's outstanding debenture series.

The above quantitative disclosure relates to the known effects to the Company and its subsidiaries as at that date and in accordance with the existing lease contracts in effect as of January 1, 2019.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESSi. Formula

a. Acquisition of TSG IT Advanced Systems Ltd.

On May 9, 2016, Formula and Israel Aerospace Industries (IAI) concluded the joint purchase of TSG – a subsidiary and the military arm of Ness Technologies, engaged in the fields of command and control systems, intelligence, homeland security and cyber security. The total purchase price in the transaction amounted to \$51,532 in cash, with each of IAI and Formula acquiring 50% of TSG for \$25,766. TSG is a leading provider of core command and control systems to Israel's defense organization, including the Israeli Defense Forces and the Israeli Police.

As TSG is jointly controlled by both Formula and IAI, its results of operations are reflected in the Company's profit or loss using the equity method of accounting commencing May 9, 2016.

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities by the Company at the date of acquisition:

Net assets	\$ 1,824
Intangible assets	13,693
Backlog	2,221
Deferred tax liability	(3,948)
Dividend preference derivative	2,140
Goodwill	9,836
Total assets acquired, net of acquired cash	<u>\$ 25,766</u>

b. Acquisition of Michpal Micro Computers (1983) Ltd.

On January 3, 2017, the Company directly acquired all of the share capital of Michpal, an Israeli-based company that develops, sells and supports a proprietary on-premise payroll software solution for processing traditional payroll stubs to Israeli enterprise and payroll service providers, for cash consideration of NIS 85,000 (approximately \$22,106), composed of the following:

Net assets	\$ 139
Intangible assets	11,329
Deferred tax liability	(2,606)
Goodwill	13,244
Total assets acquired net of acquired cash	<u>\$ 22,106</u>

ii. Sapiens

a. Acquisition of Maximum Processing Inc.

On May 26, 2016, Sapiens entered into an agreement to purchase the entire share capital of Maximum Processing Inc.'s (MaxPro) for consideration of \$4,278 (of which \$1,490 was deposited at closing in escrow). In addition, the seller may be entitled to receive has performance-based payments relating to achievement of revenue and profitability targets over three years (2016-2018) of up to \$2,500. Such payments are also subject to continued employment, and, therefore, are not part of the purchase price. MaxPro specializes in providing business and technology solutions across the insurance industry. Acquisition-related costs were immaterial.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets	\$ (240)
Intangible assets	1,859
Goodwill	<u>2,659</u>
Net assets acquired	<u>\$ 4,278</u>

b. Acquisition of 4Sight Business Intelligence Inc

On June 7, 2016, Sapiens entered into an agreement to purchase 100% of the total outstanding shares of 4Sight Business Intelligence Inc. (4Sight). 4Sight's system provides analytics software for the insurance industry. Sapiens paid the acquisition consideration in cash, consisting of \$330. In addition, the seller may be entitled to performance-based payment relating to achievement of revenue and profitability targets over three years (2016-2018) of up to \$2,200. Such payments entitlements are also subject to continued employment, and, therefore, are not part of the purchase price. Acquisition-related costs were immaterial.

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets	\$ (145)
Intangible assets	279
Deferred taxes	<u>(112)</u>
Goodwill	<u>308</u>
Net assets acquired	<u>\$ 330</u>

c. Acquisition of StoneRiver, Inc

On February 28, 2017, Sapiens completed the acquisition of all of the outstanding shares of StoneRiver, Inc. ("StoneRiver"), a provider of technology solutions and services to the insurance industry for cash consideration of \$101,351. Sapiens-related acquisition costs of \$1,348 are presented in general and administrative expenses. The acquisition of StoneRiver and Adaptik (as detailed below) expanded Sapiens' presence and scale in the North American insurance market and allows Sapiens to offer its customers and partners a more extensive product portfolio in the industry. The acquisition was accounted for under the purchase method and, accordingly, the purchase price has been allocated according to the estimated fair value of the acquired assets and assumed liabilities of StoneRiver. The results of StoneRiver's operations have been included in the consolidated financial statements since February 28, 2017.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4-- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities assumed:

Current assets	\$ 16,785
Property and equipment	1,088
Intangible assets	38,145
Goodwill	77,014
Other long-term assets	78
Total assets acquired	\$ 133,110
Current liabilities	\$ 10,595
Deferred revenues	5,742
Deferred tax liabilities	15,071
Other long-term liabilities	351
Total liabilities acquired	\$ 31,759
Total purchase price	\$ 101,351

The following table sets forth the components of intangible assets associated with the acquisition and their annual amortization rates:

	Fair value
Developed technology	\$ 34,039
Customer relationships	3,333
Backlog	773
Total intangible assets	\$ 38,145

Revenues of StoneRiver for the period since the acquisition date through December 31, 2017, which are included in the consolidated financial statements, amounted to \$67,805.

d. Acquisition of KnowledgePrice.com:

On December 27, 2017, Sapiens signed a definitive agreement for the acquisition of all of the outstanding shares of KnowledgePrice.com's ("KnowledgePrice"), a Latvian company, which specializes in digital insurance services and consulting. The fair value of the total consideration amounted to \$6,029, including cash consideration of \$4,068 (out of this amount \$3,758 was paid in December 2017 and \$310 was paid in January 2018), and a contingent obligation valued at \$1,961 at the acquisition date. In addition, the seller may be entitled to performance based payment relating to achievement of revenue and profitability targets over three years (2018-2020) and a retention payment of up to \$1,116 as of December 31, 2017, which are subject to continued employment and therefore not part of the purchase price. According to a preliminary purchase price allocation, the purchase price has been allocated according to the estimated fair value of the assets acquired and assumed liabilities of KnowledgePrice.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated provisional fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets	780
Intangible assets	2,417
Deferred taxes	(363)
Goodwill	3,195
Net assets acquired	<u>\$ 6,029</u>

e. Acquisition of Adaptik Corporation

On March 7, 2018 (the "acquisition date"), Sapiens completed the acquisition of all outstanding shares of Adaptik Corporation ("Adaptik"), a New-Jersey company based in Pennsylvania engaged in the development of software solutions for P&C insurers, (including policy administration, rating, billing, customer and task management and product design), for total cash consideration of \$18,179 (of which \$17,979 was paid in March 2018 and \$200 will be paid in March 2022). In addition, the seller may be entitled to performance based payments relating to achievement of revenue targets over three years (2018-2020) of up to \$3,700. Such payment entitlements are subject to continued employment and therefore were not included in the purchase price. Acquisition-related costs were approximately \$300. An amount of \$339 which was deposited in escrow at closing, was recognized in short-term prepaid expenses and other accounts receivable, as the Group expects to receive this amount during the following year. The result of Adaptik's operations have been included in the consolidated financial statements since March 2018.

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities as of the acquisition date:

Net liabilities excluding cash acquired	\$ (2,817)
Intangible assets	12,936
Deferred taxes	(3,528)
Goodwill	11,468
Total assets acquired, net of acquired cash	<u>\$ 18,059</u>

iii. Magic

a. Acquisition of Comblack IT Ltd.

On April 14, 2015 Magic acquired a 70% interest in Comblack IT Ltd. ("Comblack"), an Israeli-based company that specializes in software professional and outsourced management services mainly for mainframes and complex large-scale environments, for a total consideration of \$1,821, of which \$1,523 was paid upon closing and \$298 was payable contingent upon the acquired business meeting certain operational targets in 2015. Magic and the seller hold mutual call and put options respectively for the remaining 30% interest in Comblack. Due to the put option, the Group recorded a financial liability in an amount of \$989 as of the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Comblack was recorded at a value of \$8,191. Acquisition-related costs were immaterial. The acquisition was accounted for under the purchase method.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The results of operations were included in the consolidated financial statements of the Group commencing April 1, 2015.

The following table summarizes the estimated fair values of the assets acquired and liabilities assumed at the date of acquisition:

Net assets, excluding cash acquired	\$ (405)
Non-controlling interests	(989)
Intangible assets	1,249
Goodwill	1,966
Total assets acquired, net of acquired cash	<u>\$ 1,821</u>

In March 2016, Magic paid the seller the remaining contingent payments for meeting the 2015 operational targets.

b. Acquisition of Infinigy Solutions LLC

On June 30, 2015 Magic acquired a 70% interest in Infinigy Solutions LLC ("Infinigy"), a US-based services company focused on expanding the development and implementation of technical solutions throughout the telecommunications industry with offices across the US, providing nationwide coverage and support for wireless engineering, deployment services, surveying, environmental service and project management, for total consideration of \$6,527, of which \$5,600 was paid upon closing and \$927 is payable contingent upon the acquired business meeting certain operational targets in 2016 and 2017. Magic and the seller hold mutual call and put options respectively for the remaining 30% interest in Infinigy. Due to the put option, the Group recorded a financial liability in an amount of \$3,590 as of the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Infinigy was recorded at a value of \$5,234. Acquisition-related costs were immaterial. The acquisition was accounted for under the purchase method.

The results of operations were included in the consolidated financial statements of the Group commencing July 1, 2015.

The following table summarizes the estimated fair values of the assets acquired and liabilities at the date of acquisition:

Net assets, excluding cash acquired	\$ 1,182
Non-controlling interests	(3,590)
Intangible assets	3,675
Goodwill	5,260
Total assets acquired, net of acquired cash	<u>\$ 6,527</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

In July 2016, Magic paid the seller \$534 with respect to the acquired business meeting certain of its 2016 operational targets. In 2017, the acquired business did not meet its operational targets and therefore as of December 31, 2017, the seller is not entitled to any additional contingent payments.

c. Acquisition of Roshtov Software Industries Ltd.

On July 11, 2016 Magic acquired a 60% interest in Roshtov Software Industries Ltd. ("Roshtov"), an Israeli-based software company that is a market leader in Israel in patient record information systems, for a total cash consideration of \$20,550, which was paid upon closing. The purchaser and the seller hold mutual call and put options respectively for the remaining 40% interest in Roshtov. Due to the put option, the Group recorded a financial liability in an amount of \$14,012 as of the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Rosh-Tov was recorded an amount of \$14,408. Acquisition-related costs were immaterial. The acquisition was accounted for under the purchase method.

The results of operations were included in the consolidated financial statements of the Group commencing July 2016.

The following table summarizes the estimated fair values of the assets acquired and assumed liabilities at the date of acquisition:

Net assets, excluding cash acquired	\$ 15
Non-controlling interests	(14,012)
Intangible assets	22,439
Deferred tax liabilities	(5,610)
Goodwill	17,718
Total assets acquired, net of acquired cash	\$ 20,550

d. Acquisition of Shavit Software (2009) Ltd.

On October 31, 2016 Magic acquired a 100% equity interest in Shavit Software (2009) Ltd., an Israeli-based company that specializes in software professional and outsourced management services, for total consideration of \$6,836, of which \$4,699 was paid upon closing, \$2,137 (measured based on present value) was allocated to a deferred payment and contingent payment upon the acquired business meeting certain operational targets in 2017. Magic's management believes the acquisition will broaden its professional service offering to its existing and new customers in Israel. Acquisition-related costs were immaterial. The acquisition was accounted for under the purchase method.

The results of operations were included in the consolidated financial statements of the Group commencing November 1, 2016.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the assets acquired and assumed liabilities at the date of acquisition:

Net assets, excluding cash acquired	\$ 533
Intangible assets	3,489
Deferred tax liabilities	(871)
Goodwill	3,685
Total assets acquired net of acquired cash	\$ 6,836

During the years ended December 31, 2017 and 2018, Magic paid the seller \$924 and \$2,535, respectively, with respect to deferred and contingent payments as mutually agreed between the parties.

e. Other acquisitions by Magic in 2016, 2017 and 2018

During each of the years ended December 31, 2016, 2017 and 2018, Magic acquired additional activities whose influence on the financial statements of the Group was immaterial, for total consideration of \$8,884, \$1,050 and \$588, respectively.

The following table summarizes the provisional estimated fair values of the assets acquired and assumed liabilities at the date of acquisition:

	December 31,		
	2018	2017	2016
Net assets, excluding cash acquired	\$ 306	\$ (1,822)	\$ 2,174
Non-controlling interests	-	-	(1,209)
Intangible assets	23	1,149	2,370
Deferred tax liabilities	-	-	(493)
Goodwill	259	1,723	6,042
Total assets acquired net of acquired cash	\$ 588	\$ 1,050	\$ 8,884

iv. Matrix

a. Acquisition of Programa Logistics Systems Ltd.

On March 30, 2016, Matrix acquired a 60% interest in Programa Logistics Systems Ltd. ("Programa"), for total consideration of NIS 7,295 (approximately \$1,937). In addition, the sellers may be eligible for future consideration valued, on the acquisition date, at NIS 1,144 (\$304) which is contingent upon the acquired business meeting certain operational targets in the years 2016-2018. Programa, an Israeli company, is a provider of advisory services and design and development of solutions in supply chain, production and logistics. Matrix and the seller hold mutual options to purchase and sell (respectively) the remaining 40% interest in Programa. Due to the put option, the Group recorded a financial liability in an amount of \$2,471 as of the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Programa was recorded at a value of \$2,588. Acquisition-related costs were immaterial. The acquisition was accounted for under the purchase method.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the assets acquired and assumed liabilities at the date of acquisition:

Net assets	\$ 267
Non-controlling interests	(2,471)
Intangible assets	1,216
Goodwill	3,229
Total assets acquired	\$ 2,241

b. Acquisition of Network Infrastructure Technologies Inc.

On October 4, 2016, Exzac Inc. a wholly owned subsidiary of Matrix, completed the acquisition of a 60% interest in Network Infrastructure Technologies Inc. ("NIT") for a cash consideration of \$6,750. NIT, a U.S based company, mainly provides IT help desk services to the healthcare and finance sectors for managing their information systems. Matrix and the seller hold mutual call and put options respectively for the remaining 40% interest in NIT. Due to the put option, the Group recorded a financial liability in an amount of \$3,968 as of the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in NIT was recorded at a value of \$4,799. Acquisition-related costs were immaterial. The acquisition was accounted for under the purchase method.

The following table summarizes the estimated fair values of the assets acquired and assumed liabilities at the date of acquisition:

Net assets	\$ 391
Non-controlling interests	(3,968)
Intangible assets	2,138
Deferred tax liabilities	(855)
Goodwill	9,044
Total assets acquired	\$ 6,750

c. Acquisition of Second to none solutions Inc.

On November 8, 2016, Xtivia Technologies Inc., a wholly owned subsidiary of Matrix, completed the acquisition of a 55% interest in Second to none solutions Inc. ("Stons") for a consideration of \$287 paid in cash. Stons is a certified distributor of IBM products to U.S federal and enterprise customers. Matrix and the seller hold mutual options to purchase and sell (respectively) additional 30% interest in Stons. Due to the put option, the Group recorded a financial liability in an amount of \$2,184 on the acquisition date. In addition, the sellers may be eligible for future consideration valued, on the acquisition date, at \$514 which is contingent upon the acquired business meeting certain operational targets in the years 2017-2019. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Stons was recorded at a value of \$1,880. Acquisition-related costs were immaterial. The acquisition was accounted for under the purchase method.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the assets acquired and assumed liabilities at the date of acquisition:

Intangible assets	\$ 909
Non-controlling interests	(2,184)
Deferred tax liabilities	(311)
Goodwill	2,387
Total assets acquired	\$ 801

d. Acquisition of Aviv Management Engineering Systems Ltd.

On December 27, 2016, Matrix completed the acquisition of an 85% interest in Aviv Management Engineering Systems Ltd. ("Aviv") for cash consideration of NIS 19,699 (approximately \$5,123). In addition, the sellers may be eligible for future consideration valued, on the acquisition date, at NIS 1,200 (approximately \$313), which is contingent upon the acquired business meeting certain operational targets in the years 2017-2019. Aviv provides management consulting and multidisciplinary engineering consulting focusing in four areas of expertise: environmental planning, project management, urban and physical planning and management consulting. Matrix and the seller hold mutual options to acquire and sell (respectively) the remaining 15% interest in Aviv. Due to the put option, the Group recorded a financial liability of NIS 5,714 (approximately \$1,486) on the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Aviv was recorded at value of \$2,034. Acquisition-related costs were immaterial. The acquisition was accounted for under the purchase method.

The following table summarizes the estimated fair values of the assets acquired and assumed liabilities at the date of acquisition:

Net assets	\$ (1,338)
Non-controlling interests	(1,486)
Intangible assets	2,051
Deferred tax liabilities	(472)
Goodwill	6,681
Total assets acquired	\$ 5,436

e. Acquisition of Alius Group Inc

In January 2018, Matrix acquired 50.1% of the share capital of Alius consulting group, a U.S.-based company headquartered in New York, for an advance payment of approximately \$3,268 in cash (\$2,564 net of acquired cash), plus an additional \$3,000 to be paid in two years. Under the terms of the acquisition, Matrix and the seller held mutual options to purchase and sell (respectively) the remaining shares within two years following the closing date under the agreement. In November 2018, Matrix acquired the remaining 49.9% of the share capital of Alius for additional and final consideration of \$13,802. Alius is a global consulting financial firm that provides advisory services in the area of regulatory, risk and compliance in the U.S financial markets.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets	\$ (4)
Intangible assets	2,986
Deferred taxes	(806)
Goodwill	14,190
Total assets acquired net of acquired cash	<u>\$ 16,366</u>

f. Acquisition of Pleasant Valley Business Solutions, LLC.

In March 2018 Matrix acquired 100% of the share capital of Pleasant Valley Business Solutions, or PVBS, a U.S company, for cash consideration of approximately \$7,590 (or \$5,489 net of acquired cash). In addition, the seller may be entitled to receive performance-based payments, estimated on the date of the transaction at \$2,819, relating to achievement of profitability targets over three years (2018-2020) and up to \$6,500. The estimated fair value of the contingent consideration as of the acquisition date was \$2,828. PVBS is engaged in the implementation and assimilation of ERP systems for U.S government suppliers.

The following table summarizes the estimated fair values of the assets acquired and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets	\$ (834)
Intangible assets	1,867
Deferred taxes	(507)
Goodwill	7,791
Total assets acquired net of acquired cash	<u>\$ 8,317</u>

g. Acquisition of Cambium (2014) Ltd.

In July, 2018, Matrix acquired 55% of the share capital of Cambium (2014) Ltd. for NIS 3,022 in cash (approximately \$830) or NIS 2,625 net of acquired cash (approximately \$721 net of acquired cash). Matrix and the seller hold mutual options to purchase and sell (respectively) 15% of the remaining share capital of Cambium. Due to the put option, the Group recorded a financial liability in an amount of NIS 870 (approximately \$239) as of the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Cambium was recorded at a value of \$291.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the estimated provisional ⁽¹⁾ fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets	\$ (8)
Intangible assets	282
Deferred taxes	(65)
Non-controlling interests	(239)
Goodwill	<u>751</u>
Total assets acquired net of acquired cash	<u>\$ 721</u>

(1) The estimated fair values of the tangible and intangible assets referring to acquisition which were made in 2018 are provisional and are based on information that was available as of the acquisition date to estimate the fair value of these amounts. The Group's management believes the information provides a reasonable basis for estimating the fair values of these amounts, but is waiting for additional information necessary to finalize those fair values. Therefore, provisional measurements of fair value reflected are subject to change. The Group expects to finalize the tangible and intangible assets valuation and complete the acquisition accounting as soon as practicable but no later than the measurement period.

h. Acquisition of Integrity Software 2011 Ltd.

In July, 2018, Matrix acquired 65% of the share capital of Integrity Software 2011 Ltd., an Israeli based company providing software solutions to the enterprise sector in Israel in the fields of software security, IT infrastructure and virtualization, for approximately NIS 9,000 (approximately \$2,454) in cash or NIS 4,881 (approximately \$1,330) net of acquired cash. In addition, the seller may be entitled to performance-based payment capped at NIS 4,000 (approximately \$1,091), estimated on the date of the transaction at NIS 823 (approximately \$224), relating to achievement of certain profitability targets for the years 2019-2021. Matrix and the seller hold mutual options to purchase and sell (respectively) 10% of the remaining share capital of Integrity. Due to the put option, the Group recorded a financial liability in an amount of NIS 1,167 (approximately \$318) as of the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Integrity was recorded at a value of \$333.

The following table summarizes the estimated provisional ⁽¹⁾ fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets	\$ (1,131)
Intangible assets	1,316
Deferred taxes	(303)
Non-controlling interests	(318)
Goodwill	<u>1,990</u>
Total assets acquired net of acquired cash	<u>\$ 1,554</u>

(1) The estimated fair values of the tangible and intangible assets referring to acquisition which were made in 2018 are provisional and are based on information that was available as of the acquisition date to estimate the fair value of these amounts. The Group's management believes the information provides a reasonable basis for estimating the fair values of these amounts, but is waiting for additional information necessary to finalize those fair values. Therefore, provisional measurements of fair value reflected are subject to change. The Group expects to finalize the tangible and intangible assets valuation and complete the acquisition accounting as soon as practicable but no later than the measurement period.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

i. Acquisition of Noah Technologies Ltd.

In November 2018, Matrix acquired 100% of the share capital of Noah Technologies Ltd, an Israeli based company providing engineering solutions, computerized catalogs and IT professional services, for approximately NIS 6,000 (approximately \$1,626) in cash or NIS 4,161 (approximately \$1,127) net of acquired cash. In addition, the seller may be entitled to performance-based payments capped at NIS 4,000 (approximately \$1,084), estimated on the date of the transaction at NIS 1,216 (approximately \$330), relating to achievement of certain profitability targets for the years 2019-2021.

The following table summarizes the estimated provisional ⁽¹⁾ fair values of the acquired assets and assumed liabilities, with reference to the acquisition as of the acquisition date:

Net assets	\$	(473)
Intangible assets		580
Deferred taxes		(133)
Goodwill		1,485
Total assets acquired net of acquired cash	\$	<u>1,459</u>

(1) The estimated fair values of the tangible and intangible assets referring to acquisition which were made in 2018 are provisional and are based on information that was available as of the acquisition date to estimate the fair value of these amounts. The Group's management believes the information provides a reasonable basis for estimating the fair values of these amounts, but is waiting for additional information necessary to finalize those fair values. Therefore, provisional measurements of fair value reflected are subject to change. The Group expects to finalize the tangible and intangible assets valuation and complete the acquisition accounting as soon as practicable but no later than the measurement period.

v. Michpal

a. Acquisition of Effective Solutions Ltd.

In November 2018, Michpal acquired 80% of the share capital of Effective Solutions Ltd., an Israeli based service provider of consulting services in the fields of operational cost savings and procurement, as well as salary control and monitoring. The aggregate purchase price for the 80% interest was NIS 24,000 (approximately \$6,516) in cash. In addition, Michpal and the seller hold mutual call and put options, respectively, for the remaining 20% interest in Effective Solutions. Due to the put option, the Group recorded a financial liability in an amount of NIS 2,841 (approximately \$758) as of the acquisition date. As of December 31, 2018, the financial liability due to the put option granted to non-controlling interests in Effective Solutions remained at value of \$758.

The results of operations were included in the consolidated financial statements of the Group commencing November 1, 2018.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 4:- BUSINESS COMBINATION, SIGNIFICANT TRANSACTION AND SALE OF BUSINESS (Cont.)

The following table summarizes the provisional ⁽¹⁾ estimated fair values of the assets acquired and liabilities at the date of acquisition:

Net assets	\$ 439
Non-controlling interests	(269)
Intangible assets	739
Deferred tax liability	(170)
Goodwill	<u>5,434</u>
Total assets acquired net of acquired cash	<u>\$ 6,173</u>

(1) The estimated fair values of the tangible and intangible assets referring to acquisition which were made in 2018 are provisional and are based on information that was available as of the acquisition date to estimate the fair value of these amounts. The Group's management believes the information provides a reasonable basis for estimating the fair values of these amounts, but is waiting for additional information necessary to finalize those fair values. Therefore, provisional measurements of fair value reflected are subject to change. The Group expects to finalize the tangible and intangible assets valuation and complete the acquisition accounting as soon as practicable but no later than the measurement period.

NOTE 5:- MARKETABLE SECURITIES

The Group invests in marketable debt instruments which were measured at fair value through profit or loss, and in marketable debt instruments, which are measured at fair value through other comprehensive income. The following is a summary of the Group's marketable securities:

a. Composition:

	December 31,	
	2018	2017
Short-term:		
Fair value through profit or loss ⁽¹⁾	1,156	1,209
Fair value through other comprehensive income	8,757	12,929
Total short-term marketable securities	<u>\$ 9,913</u>	<u>\$ 14,138</u>
Total marketable securities	<u>\$ 9,913</u>	<u>\$ 14,138</u>

⁽¹⁾ The Group recognized gains (losses) from marketable securities classified as held for trading (until December 31, 2017) or debt instruments measured at fair value through profit or loss (commencing from January 1, 2018) in amounts of \$136, (\$149) and \$53 during the years ended December 31, 2016, 2017 and 2018, respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 5-- MARKETABLE SECURITIES (Cont.)

b. The following is a summary of debt instruments which the Group measures at fair value through other comprehensive income:

	December 31,							
	2018				2017			
	Amortized cost	Unrealized losses	Unrealized Gains	Market value	Amortized cost	Unrealized losses	Unrealized gains	Market Value
Commercial bonds	\$ 8,851	\$ (94)	-	\$ 8,757	\$ 12,987	\$ (58)	-	\$ 12,929

In 2016, 2017 and 2018, the Group received proceeds from sales and maturity of debt instruments at fair value through other comprehensive income of \$16,541, \$39,594 and \$4,000 and recorded related net gains (losses) of (\$16), \$94 and \$0 in profit or loss under financial income (expenses), respectively.

The amortized costs of debt instruments at fair value through other comprehensive income as of December 31, 2018, by contractual maturities, are shown below:

	Amortized cost	Unrealized gains (losses)		Market value
		Gains	Losses	
Due within one year	\$ 3,326	\$ -	\$ (21)	\$ 3,305
Due after one year through three years	\$ 5,525	\$ -	\$ (73)	\$ 5,452
	\$ 8,851	\$ -	\$ (94)	\$ 8,757

The following is the change in the gross other comprehensive income from marketable securities during 2017 and 2018:

	Other comprehensive income
Other comprehensive income from debt instruments at fair value through other comprehensive income as of January 1, 2017	167
Unrealized gain from available-for-sale securities	188
Realized gain reclassified into profit or loss	(94)
Other comprehensive income from debt instruments at fair value through other comprehensive income as of December 31, 2017	\$ 261
Unrealized loss from debt instruments at fair value through other comprehensive income	(37)
Other comprehensive income from debt instruments at fair value through other comprehensive income as of December 31, 2018	\$ 224

NOTE 6-- PREPAID EXPENSES AND OTHER ACCOUNTS RECEIVABLE

	December 31,	
	2018	2017
Government departments	\$ 12,318	\$ 16,494
Employees	426	619
Prepaid expenses and advances to suppliers	25,161	26,597
Restricted deposits	408	11
Related Parties	197	273
Receivables in respect of an embedded derivative transaction	354	-
Other	1,533	910
Total	\$ 40,397	\$ 44,904

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 7:- FAIR VALUE MEASUREMENT

In determining fair value, the Group utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs to the extent possible and considers counterparty credit risk in its assessment of fair value.

The Group's financial assets and liabilities measured at fair value on a recurring basis, including accrued interest components, consisted of the following types of instruments as of December 31, 2017 and 2018:

	Fair value measurements			
	December 31, 2018			
	Level 1	Level 2	Level 3	Total
Assets:				
Marketable debt securities designated at fair value through profit or loss (Note 5):	\$ -	\$ 1,156	\$ -	\$ 1,156
Marketable debt securities measured at fair value through other comprehensive income (Note 5):	-	8,757	-	8,757
Receivables in respect of an embedded derivative transaction	-	-	354	354
Dividend preference derivative in TSG ⁽¹⁾	-	-	2,733	2,733
Total financial assets	\$ -	\$ 9,913	\$ 3,087	\$ 13,000
Liabilities:				
Put options of non-controlling interests ⁽²⁾	\$ -	\$ -	\$ 56,599	\$ 56,599
Contingent consideration ⁽²⁾	-	-	7,047	7,047
Total financial liabilities	\$ -	\$ -	\$ 63,646	\$ 63,646
	Fair value measurements			
	December 31, 2017			
	Level 1	Level 2	Level 3	Total
Assets:				
Marketable debt securities designated at fair value through profit or loss (Note 5):	\$ -	\$ 1,209	\$ -	\$ 1,209
Marketable debt securities measured at fair value through other comprehensive income (Note 5):	-	12,929	-	12,929
Dividend preference derivative in TSG ⁽¹⁾ (Note 8):	-	-	2,400	2,400
Total financial assets	\$ -	\$ 14,138	\$ 2,400	\$ 16,538
Liabilities:				
Put options of non-controlling interests ⁽²⁾	\$ -	\$ -	\$ 52,876	\$ 52,876
Contingent consideration ⁽²⁾	-	-	6,345 ^(*)	6,345 ^(*)
Total financial liabilities	\$ -	\$ -	\$ 59,221^(*)	\$ 59,221^(*)

(1) The fair value of dividend preference derivative in TSG was estimated using the Monte-Carlo simulation technique.

(2) The fair value of put options of non-controlling interests and contingent consideration was determined based on the present value of the future expected cash flow.

(*) Adjustment to comparative data

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 8-- INVESTMENTS IN COMPANIES ACCOUNTED FOR AT EQUITY METHOD

a. The following is a summary of the Group's investments in companies accounted for at equity:

	December 31,	
	2018	2017
Affiliated company	27	55
Joint venture – TSG (see Note 4(i)(a))	25,683	25,260
	<u>25,710</u>	<u>25,315</u>

b. The Company holds a 50% share in TSG, a joint venture engaged in the fields of command and control systems, intelligence, homeland security and cyber security. The Company's interest in TSG is accounted for using the equity method in the consolidated financial statements.

The following is the composition of the Company's investment in TSG:

	December 31,	
	2018	2017
Shares	18,014	17,591
Capital notes	7,669	7,669
	<u>25,683</u>	<u>25,260</u>
Dividend preference derivative in TSG ⁽¹⁾	<u>2,733</u>	<u>2,400</u>
Goodwill	<u>9,836</u>	<u>9,836</u>

⁽¹⁾ Dividend preference derivative in TSG is included in Group's long term prepaid expenses and other accounts receivable and is accounted for at fair value through to profit or loss.

c. The following table summarizes activity related to the Company's investment in TSG:

January 1, 2016	\$ -
Acquisition of shares	16,004
Investment in capital notes	7,669
Company's share of profit	349
December 31, 2016	<u>\$ 24,022</u>
Company's share of profit	1,134
Company's share of other comprehensive income	104
December 31, 2017	<u>\$ 25,260</u>
Company's share of profit	365
Company's share of other comprehensive income	58
December 31, 2018	<u>\$ 25,683</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 8-- INVESTMENTS IN COMPANIES ACCOUNTED FOR AT EQUITY (Cont.)

d. Summarized financial information of TSG:

(i) Summarized statement of financial position as of December 31, 2017 and 2018 (as presented in TSG's financial statements):

	December 31,	
	2018	2017
Current assets	39,101	34,137
Noncurrent assets ⁽¹⁾	1,498	1,746
Current liabilities	(22,152)	(20,311)
Noncurrent liabilities	(3,750)	(4,426)
Equity	14,697	11,146
Company's share in TSG	50%	50%
	7,349	5,573
Excess cost of intangible assets net of deferred tax	8,498	9,851
Goodwill	9,836	9,836
Company's carrying amount of the investment in TSG	25,683	25,260

⁽¹⁾ Not including balance of goodwill in an amount of \$19,006 as of December 31, 2017 and 2018.

(ii) Summarized operating results of TSG for the years ended December 31, 2017 and 2018 (as presented in TSG's financial statements):

	Year ended December 31,		
	2018	2017	2016
Revenues	66,154	66,816	38,648
Net income	3,437	4,938	2,744
Other comprehensive income	116	208	-
Total comprehensive income	3,553	5,146	2,744
Company's share in TSG	50%	50%	50%
Company's share of total comprehensive income before amortization of excess cost of intangible assets net of tax	1,776	2,573	1,372
Amortization of excess cost of intangible assets net of tax	(1,353)	(1,335)	(1,023)
Company's share of total comprehensive income	423	1,238	349
Company's share of other comprehensive income	58	104	-
Company's share of profit	365	1,134	349
	423	1,238	349

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 9:- PROPERTY, PLANTS AND EQUIPMENT, NET

a. Composition:

	December 31,	
	2018	2017
Cost:		
Computers, software, furniture and equipment	\$ 86,122	\$ 80,888
Motor vehicles	1,631	1,659
Buildings	1,833	1,833
Leasehold improvements	23,975	22,080
	<u>113,561</u>	<u>106,460</u>
Accumulated depreciation:		
Computers, software, furniture and equipment	\$ 70,401	\$ 64,604
Motor vehicles	765	636
Buildings	217	70
Leasehold improvements	12,996	11,343
	<u>84,379</u>	<u>76,653</u>
Depreciated cost	<u>\$ 29,182</u>	<u>\$ 29,807</u>

b. Depreciation expenses totaled \$7,880, \$9,598, and \$10,480 for the years ended December 31, 2016, 2017 and 2018, respectively.

NOTE 10:- INTANGIBLE ASSETS, NET

a. Intangible assets, net, are comprised of the following as of the below dates:

	December 31,	
	2018	2017
Original amounts:		
Capitalized Software costs	\$ 197,685	\$ 196,523
Customer relationship	138,480	133,220
Acquired technology	84,245	75,672
Backlog and non-compete agreement	6,781	6,063
Other intangibles	4,171	4,510
Patent	1,280	1,385
	<u>432,642</u>	<u>417,373</u>
Accumulated amortization:		
Capitalized Software costs	148,845	142,019
Customer relationship	78,470	65,705
Acquired technology	44,831	35,466
Backlog and non-compete agreement	6,105	5,837
Other intangibles	3,779	3,890
Patent	566	473
	<u>282,596</u>	<u>253,390</u>
Total	<u>\$ 150,046</u>	<u>\$ 163,983</u>

b. Amortized expenses totaled \$24,490, \$34,048 and \$38,254 for the years ended December 31, 2016, 2017 and 2018, respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 11:- GOODWILL

The changes in the carrying amount of goodwill for the years ended December 31, 2017 and 2018 were as follows:

Balance as of January 1, 2017	\$ 495,362
Acquisition of subsidiaries	94,851
Classifications	1,105
Foreign currency translation adjustments	<u>25,954</u>
Balance as of December 31, 2017	617,272
Acquisition of subsidiaries	43,394
Classifications	(18)
Foreign currency translation adjustments	<u>(19,793)</u>
Balance as of December 31, 2018	<u>\$ 640,855</u>

The Company performed annual impairment tests during the fourth quarter of 2018 and did not identify any impairment losses (see Note 2(21)).

NOTE 12:- SHORT TERM LIABILITIES TO BANKS AND OTHERS

	December 31,		December 31,	
	2018		2017	
	Interest rate	Currency	2018	2017
	%			
Bank credit	2-3.1	NIS	\$ 736	\$ 947
Bank credit	US Prime -0.2	USD	2,362	2,125
Short-term bank loans	1.7-2.5	NIS	1,068	22,910
Current maturities of long-term loans from banks and other financial institutions (Note 14)	2.5-5.81	NIS	65,453	42,839
Current maturities of long-term loans from banks (Note 14)	Libor +2.2	NIS (Linked to USD)	836	862
Short-term interest on long-term loans from other financial institutions ⁽¹⁾	2.6-5.5	NIS	725	1,136
Total			<u>\$ 71,180</u>	<u>\$ 70,819</u>

NOTE 13:- OTHER ACCOUNTS PAYABLE

	December 31,	
	2018	2017
Government institutions	\$ 29,485	\$ 29,816
Accrued royalties to the IIA (see Note 19f)	843	276
Accrued expenses and other current liabilities	<u>23,641</u>	<u>23,053</u>
Total	<u>\$ 53,969</u>	<u>\$ 53,145</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 14:- LONG TERM LIABILITIES TO BANKS AND OTHERS

a. Composition:

Interest rate	Currency	Long-term liabilities	Current maturities	Total long-term liabilities net of current maturities	Total long-term liabilities net of current maturities
%			December 31, 2018		December 31, 2017
2.5-5.81	NIS (Unlinked)	\$ 203,150	65,453	137,697	\$ 132,753
Libor +2.2	NIS (Linked to USD)	2,666	836	1,830	2,863
		<u>\$ 205,816</u>	<u>66,289</u>	<u>139,527</u>	<u>\$ 135,616</u>

i) In November 2016, Magic obtained a loan in an amount of \$31,356, linked to the New Israel Shekel, from an Israeli financial institution. The principal amount is payable in seven equal annual installments, with the final payment due on November 2, 2023, and bears a fixed interest rate of 2.60% per annum, payable in two semi-annual payments. Under the terms of the loan with the Israeli financial institution, Magic has undertaken to maintain certain financial covenants (see note 19 (c)(4)).

ii) On February 28, 2017, Sapiens (via its wholly-owned subsidiary, Sapiens Americas Corporation) entered into a secured credit agreement, with HSBC Bank USA, National Association, for the acquisition of StoneRiver. Pursuant to the credit agreement, Sapiens borrowed \$40 million for a five-year term, at the rate of LIBOR plus 1.85%. Upon Sapiens' consummation of a public offering and private placement of Sapiens' Series B Debentures in September 2017, Sapiens utilized the proceeds

iii) received from the sale of the debentures for repayment of the entire outstanding term loan amount (including accrued interest) under the credit agreement with HSBC.

b. Maturity dates:

	December 31,	
	2018	2017
First year (current maturities)	\$ 66,289	\$ 43,701
Second year	47,731	53,645
Third year	33,893	34,270
Fourth year	30,776	19,066
Fifth year and thereafter	27,127	28,635
Total	<u>\$ 205,816</u>	<u>\$ 179,317</u>

c. Details of liens, guarantees and credit facilities are described in Note 19.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 15:- DEBENTURES

The Group's liabilities under debentures are attributable to debentures issued by Formula in September 2015, as well as debentures issued by Sapiens in September 2017.

a. Composition:

	Effective Interest rate %	Currency	Par Value	Unamortized debt premium (discount) and issuance costs, net	Current maturities December 31, 2018	Total long-term debentures, net of current maturities	Short-term accrued interest	Total short-term and long-term debentures
Formula's Series A Secured Debentures (2.8%)	2.4	NIS (Unlinked)	\$ 54,769	684	9,128	46,325	758	56,211
Formula's Series B Convertible Debentures (2.74%)	3.65	NIS (Linked to fix rate of USD)	31,812	(79)	31,812	-	2,971	34,704
Sapiens' Series B Debentures (3.37%)	3.69	NIS (Linked to fix rate of USD)	79,185	(710)	9,898	68,577	1,334	79,809
			<u>\$ 165,766</u>	<u>(105)</u>	<u>50,838</u>	<u>114,902</u>	<u>5,063</u>	<u>170,724</u>

	Effective Interest rate %	Currency	Par Value	Unamortized debt premium (discount) and issuance costs, net	Current maturities	Total long-term debentures, net of current maturities December 31, 2017	Short-term accrued interest	Long-term accrued interest	Total short-term and long-term debentures
Formula's Series A Secured Debentures (2.8%)	3.07	NIS (Unlinked)	\$ 25,810	(209)	3,687	21,914	357	-	25,958
Formula's Series B Convertible Debentures (2.74%)	3.65	NIS (Linked to fix rate of USD)	31,871	(400)	-	31,471	-	2,073	33,544
Sapiens' Series B Debentures (3.37%)	3.69	NIS (Linked to fix rate of USD)	79,185	(904)	-	78,281	782	-	79,063
			<u>\$ 136,866</u>	<u>(1,513)</u>	<u>3,687</u>	<u>131,666</u>	<u>1,139</u>	<u>2,073</u>	<u>138,565</u>

During the years ended December 31, 2017 and 2018, the Group recorded \$2,441 and \$5,165, respectively, of interest expenses, and \$391 and \$289, respectively, as amortization of debt premium, discount and issuance costs, net in respect of the Group's debentures.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 15:- DEBENTURES (Cont.)

b. Aggregate principal annual payments of the debentures:

	Repayment amount
2019 ⁽¹⁾	30,376
2020	19,026
2021	19,026
2022	19,026
2023 and thereafter	57,850
Total	145,304

⁽¹⁾ Based on the remaining outstanding Series B Convertible Debentures in the amount of \$11,350, which were not converted prior to their maturity on March 26, 2019 (see Note 23(f)).

c. Formula's debentures

On September 16, 2015, Formula concluded a public offering in Israel on the Tel-Aviv Stock Exchange (the "TASE") of (i) NIS 102.3 million par value of Series A Secured Debentures (the "Series A Secured Debentures") and (ii) NIS 125 million par value of Series B Convertible Debentures that are linked to the US Dollar (based on the exchange rate on September 8, 2015 of 3.922) (the "Series B Convertible Debentures"). Formula's debentures were offered and sold pursuant to a shelf prospectus filed with the Israeli Securities Authority (the "ISA") and TASE on August 6, 2015, amended thereafter on September 3, 2015 and which term was extended in July 2017 until August 6, 2018. The public offering of the debentures was made only in Israel and not to U.S. persons (as defined in Rule 902(k) under the Securities Act of 1933, as amended (the "Securities Act")), in an overseas directed offering (as defined in Rule 903(b)(i)(ii) under the Securities Act), and was exempt from registration under the Securities Act pursuant to the exemption provided by Regulation S thereunder. The sale of the debentures was not registered under the Securities Act, and the debentures may not be offered or sold in the United States and/or to U.S. persons without registration under the Securities Act or an applicable exemption from the registration requirements of the Securities Act.

In accordance with the indenture for the Series A Secured Debentures and Series B Convertible Debentures, Formula has undertaken to maintain a number of conditions and limitations on the manner in which it operates its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on the Company's assets, or undergo an asset sale or other change that results in a fundamental change in the Company's operations, and to meet certain financial covenants (see Notes 19a and 19c(ii)).

i) Formula's Series A Secured Debentures

The Series A Secured Debentures were issued at a purchase price equal to 100% of their par value and bear fixed annual interest at a rate of 2.8% (which may vary based on the credit rating of the debentures), payable semi-annually. The proceeds of the offering, before early commitment commission valued at \$129 with respect to the units for which the qualified investors have committed to subscribe, and issuance costs of \$190, amounted to NIS 102,260 (approximately \$26,295). The principal of the Series A Secured Debentures, are denominated in NIS (not linked to any currency or index) and will be paid to holders in eight equal annual installments commencing on July 2, 2017. Formula may redeem the Series A Secured Debentures or any part thereof at its discretion after 60 days from their issuance date subject to certain conditions. In accordance with the terms of the indenture related to the Series A Secured Debentures, the collateral will consist of a certain number of shares of the Company's subsidiaries: Matrix, Magic and Sapiens (see Note 19a).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 15:- DEBENTURES (Cont.)

On January 31, 2018, the Company consummated a private placement to qualified investors in Israel, of an additional, aggregate NIS 150 million par value of Series A Secured Debentures at a price of NIS 1,034.7 for each NIS 1,000 principal amount. The aggregate gross proceeds totaled NIS 155,205 (approximately \$45,581), excluding issuance costs of \$225. As a result of the private placement, the total outstanding principal amount of the Series A Secured Debentures increased to approximately NIS 239,478 million (approximately \$70,331). The terms of the Series A Secured Debentures sold in the private placement are identical in all respects to those of the Series A Secured Debentures sold in Formula's September 2015 public offering.

ii) Formula's Series B Convertible Debentures

Formula's Series B Convertible Debentures were issued at a purchase price equal to 102% of their par value and bear fixed annual interest at a rate of 2.74% (which may vary based on the credit rating of the debentures), and are to be repaid in one installment of principal and interest upon maturity of the debentures on March 26, 2019 (at which time the accrued interest will constitute 10% of the principal amount of Formula's Series B Convertible Debentures, in the aggregate). The proceeds of the offering, before early commitment commission valued at \$131 with respect to the units for which the qualified investors committed to subscribe, and issuance costs of \$236 amounted to NIS 127,500 (approximately \$32,785). The principal of the Series B Convertible Debentures is subject to adjustment based on changes in the exchange rate between the NIS and the dollar relative to the exchange rate on September 8, 2015 (3.922), and will be repaid on March 26, 2019.

Formula's Series B Convertible Debentures are convertible, at the election of each holder, into Formula's ordinary shares, from the date of issuance and until March 10, 2019, at a conversion price of, as of the date of the issuance, NIS 157 par value of convertible debentures per one share, adjusted in the event that the Company effects a share split or reverse share split, a rights offering, a distribution of bonus shares or a cash dividend. As of December 31, 2017 and 2018, the adjusted conversion price to one share was NIS 150.27542 par value and 147.54176 par value, respectively, following cash dividend distributions.

In compliance with IAS 32, the Group identified and separated an equity component contained in Formula's Series B Convertible Debentures, valued at \$1,248 (included in additional paid in capital). Debt discount and issuance costs (approximately \$367) were allocated to the Formula's Series B Convertible Debentures discount and are amortized as financial expenses over the term of these debentures due in 2019. Formula may not redeem the Series B Convertible Debentures or any part thereof at its discretion.

As a result of conversions that were effected during 2018 and mainly 2019, prior to the maturity of the Series B Convertible Debentures in March 2019, holders of Series B Convertible Debentures converted an aggregate principal par value amount of NIS 80,484 (of which NIS 231.7 were converted in 2018) into 545,485 ordinary shares (of which 1,556 ordinary shares were issued in 2018), constituting 3.57% of Formula's issued and outstanding share capital (following those conversions). The remaining outstanding Series B Convertible Debentures matured on March 26, 2019, and the remaining outstanding principal of NIS 44,516 (or \$11,350) and interest on those debentures of \$1,135 were paid on that date.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 15:- DEBENTURES (Cont.)

iii) Formula's Series C Secured Debentures

On March 31, 2019, Formula consummated a public offering in Israel of a new series of secured debentures - Series C Secured Debentures—in an aggregate NIS 300,000 par value amount, at a price of NIS 1,000 for each unit of NIS 1,000 principal amount. The aggregate gross proceeds from the public offering totaled NIS 298,500 (approximately \$82,186). For further information, see Note 24 (a).

d. Sapiens' Series B Debentures

In September 2017, Sapiens issued its unsecured Series B Debentures in an aggregate principal amount of NIS 280,000 (approximately \$79,186), linked to US dollars, payable in eight equal annual payments of \$9,898 on January 1 of each of the years 2019 through 2026. The outstanding principal amount of Sapiens' Series B Debentures will bear a fixed interest rate of 3.37% per annum, payable on January 1 and July 1 of each of the years 2018 through 2025, with one final interest payment on January 1, 2026. Debt discount and issuance costs were approximately \$956, allocated to Sapiens' Series B Debentures discount and are amortized as financial expenses over the term of the Series B Debentures due in 2026. The first installment, in an amount of \$9,898, was paid on January 1, 2019.

Sapiens' Series B Debentures are listed for trading on the TASE. Sapiens' Series B Debentures are unsecured and non-convertible. The interest rate payable on Sapiens' Series B Debentures may be increased in the event that the debentures' rating is downgraded below a certain level.

In accordance with the indenture for the Sapiens Series B Debentures, Sapiens has undertaken to maintain a number of conditions and limitations on the manner in which it operates its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on Sapiens' assets, or undergo an asset sale or other change that results in a fundamental change in Sapiens' operations and to meet certain financial covenants (see Note 19c(iii)).

NOTE 16:- RELATED PARTIES TRANSACTIONS

a) Acquisition of Insecco

On August 18, 2015, Sapiens completed the acquisition from Asseco, the parent company of Formula, of all issued and outstanding shares of Insecco. Under the share purchase agreement for that acquisition, Asseco committed to assign all customer contracts to Insecco that relate to the intellectual property that Sapiens acquired as part of the acquisition. In the event that Asseco cannot obtain the consent of any customer to the assignment of its contract to Insecco, Asseco will hold that customer's contract in trust for the benefit of Insecco. Under that arrangement, in 2016, Insecco invoiced Asseco in a back-to-back manner for all invoices issued by Asseco on Insecco's behalf to customers under those contracts that were not yet assigned by Asseco to Insecco. During the years ended December 31, 2016, 2017 and 2018, Asseco provided back office and professional services and fixed assets to Insecco in amounts totaling approximately \$1,900, \$1,600 and \$980, respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 16-- RELATED PARTIES TRANSACTIONS (Cont.)

b) Services obtained from Asseco

During the years ended December 31, 2017 and 2018, Asseco provided back-office services, professional services and fixed assets to Sapiens' wholly-owned subsidiary, Sapiens Poland, in amounts totaling approximately \$1,600 and \$980, respectively.

c) Services provided to Asseco

During 2017 and 2018, Sapiens Poland performed services as a sub-contractor on behalf of Asseco for clients of Asseco in total amounts of approximately \$8,250 and \$3,200, respectively. For historic reasons, Asseco issues invoices to those clients and then Sapiens in turn invoices Asseco on a back-to-back basis.

d) During 2017 Matrix performed services as a sub-contractor on behalf of Asseco Denmark A.S., a subsidiary of Asseco, in an amount totaling approximately €0.5 million (\$564).

e) Fees paid for board services in affiliates

Sapiens paid the Company approximately \$28.6 and \$25.0 in respect of its share of the director's fees of Mr. Guy Bernstein, its Chairman and the Company's chief executive officer, for the years ended December 31, 2017 and 2018, respectively.

Matrix paid the Company approximately \$30.0 and \$29.0 in respect of its share of the director's fees of Mr. Guy Bernstein, its Chairman and the Company's chief executive office, for the years ended December 31, 2017 and 2018 respectively.

f) Other Transactions

From time to time, in the Group's ordinary course of business, the Group engages in non-material transactions between its subsidiaries and affiliates where the amount involved in, and the nature of, the transactions are not material to any party to the transaction. The Group believes that these transactions are made on an arms' length basis upon terms and conditions no less favorable to the Group, its subsidiaries and affiliates, as it could obtain from unaffiliated third parties. If Group engages with its subsidiaries and affiliates in transactions which are not in the ordinary course of business, the Group receives the approvals required under the Companies Law. These approvals include audit committee approval, board approval and, in certain circumstances, shareholder approval.

g) As of December 31, 2017 and 2018, the Group had trade payable balances due from its transactions with Asseco, as detailed above, in amounts of approximately \$150 and \$0, respectively. In addition, as of December 31, 2017 and 2018, the Group had trade receivables balances due from its transactions with Asseco, as detailed above, in amounts of approximately \$1,038 and \$955, respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 17:- EMPLOYEE OPTION PLANS

a) Formula and its subsidiaries grant, from time to time, options to their officers and employees to purchase shares in the respective companies. In general, the options expire ten years after grant. The following table sets forth the breakdown of share-based compensation expense resulting from stock options grants, as included in the consolidated statements of profit or loss:

	Year ended December 31,		
	2018	2017	2016
Cost of revenues	\$ 2	\$ 7	\$ 15
Research and development expenses	4	8	17
Selling and marketing expenses	4	-	71
General and administrative expenses	3,971	4,019	4,291
Total share-based compensation expense	\$ 3,981	\$ 4,034	\$ 4,394

b) Formula:

- (i) In March 2011, Formula's shareholders approved the adoption of Formula's 2011 Employee and Officer Share Incentive Plan (the "2011 plan"). Pursuant to the 2011 plan, Formula may grant from time to time to Formula's and its investees' employees and officers (which are not Formula's controlling shareholders) ordinary shares, restricted shares or options to purchase up to 545,000 ordinary shares of Formula. The 2011 plan is administered by Formula's board of directors. The 2011 plan provides that share based compensation may be granted, from time to time, to such grantees to be determined by the board, at an exercise price and under such terms to be determined at its sole and absolute discretion. Share based compensation may be granted under the 2011 plan through March 2021. In 2012, Formula's shareholders approved the increase of the amount of ordinary shares reserved for issuance under the 2011 plan by 1,200,000 options.
- (ii) In March 2011, concurrently with the amendment and extension of Formula's chief executive officer's service agreement, Formula approved a grant of options to its chief executive officer, exercisable for an additional 543,840 ordinary shares. The options vested in equal quarterly installments, over a four-year period that commenced on December 31, 2011 and concluded on December 31, 2015. The exercise price of the options was NIS 0.01 per share. In May 2011, the chief executive officer exercised all of these options for redeemable restricted shares, for which the Company's redemption right was to lapse in accordance with the remaining vesting schedule for the unvested options from which they arose. Total fair value of the grant was calculated based on the Formula share price on the grant date and totaled \$9,055 (\$16.65 per share).

In December 2011, at which time Formula was negotiating an amendment and an extension of its chief executive officer's service agreement, it redeemed all of the above-described 543,840 shares for no consideration.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 17:- EMPLOYEE OPTION PLANS (Cont.)

In March 2012, concurrently with the amendment and extension of its chief executive officer's service agreement, the board of directors of Formula awarded him with a new share option incentive plan, following the redemption of the 543,840 redeemable ordinary shares, which were granted to him in March 2011 and which were not yet vested in their redemption date. Under the 2011 plan, the chief executive officer of Formula was granted options exercisable for 1,122,782 ordinary shares of Formula (the "new grant"), as long as he continues to serve as (i) a director of Formula and/or (ii) a director of each of the directly held subsidiaries of Formula; provided that if he fails to meet the foregoing requirement (A) due to the request of the board of directors of either Formula or any of its directly held subsidiaries (other than a request which is based on actions or omissions by the chief executive officer that would constitute "cause" under his service agreement with Formula), (B) because the chief executive officer is prohibited under the governing law or charter documents of the relevant company or the stock exchange rules and regulations applicable to such company from being a director of such company (other than due to his actions or omissions) or (C) notwithstanding the chief executive officer's willingness to be so appointed (but provided that neither (A) nor (B) applies); then, in each of (A), (B) and (C), the chief executive officer will be deemed to have complied with clauses (i) or (ii) above. The options vest, i.e., Formula's redemption right with respect to the options and the underlying ordinary shares issuable upon exercise lapses, in equal quarterly installments over an eight-year period that commenced in March 2012 and concludes on December 31, 2019. Notwithstanding the foregoing, if a change of control of the Company occurs, then all unvested options and/or restricted shares will immediately become vested. The exercise price of the options is NIS 0.01 per share. The new grant is accounted for as a modification to the March 2011 grant to the chief executive officer. Total fair value of the grant was calculated based on the share price on the grant date and totaled \$18,347 (\$16.34 per share). In accordance with the terms of the options grant, the shares issuable upon exercise of the options will be deposited with a trustee and Formula's chief executive officer will not be permitted to vote or dispose of them until the shares are released from the trust. In June 2013 all options were exercised into shares however they have been deposited with a trustee and Formula's chief executive officer was not permitted to vote or dispose of them until the shares are released from the trust. All shares participate in dividends and have the right to vote, however for so long as the shares are held by the trustee (even if they have vested) the voting rights may only be exercised by the trustee. In accordance with the guidelines of Formula incentive plan, as long as the shares underlying any grant under the plan are being held by the trustee they will be voted by the trustee in the same proportion as the results of the shareholder meeting. Only those shares for which the vesting period has expired may be collected from the trustee.

On August 3, 2017 and on August 22, 2017 Asseco sold 2,356,605 and 589,151, respectively, of Formula's ordinary shares, in the aggregate representing 20% of Formula outstanding share capital to eleven (11) Israeli financial institutions and to the Company's chief executive officer, respectively, in privately negotiated sales transactions. The sales resulted in Asseco's share interest in Formula decreasing from 46.3% to 26.3% and to its loss of control of the Company. In accordance with Mr. Bernstein's share based award plan, such loss of control in the Company resulted in the immediate acceleration of all of his unvested shares, which amounted to 350,869 shares as of such date.

(iii) In November 2014, Formula's board of directors awarded its chief financial officer with 10,000 restricted shares under the 2011 plan (the "restricted shares"). These restricted shares vest on a quarterly basis over a four-year period, commencing on November 13, 2014 and concluding on November 13, 2018, provided that during such time the chief financial officer will continue to serve as (i) an officer of the Company and/or (ii) an officer in one of the directly held affiliates, except that if he fail to meet the service condition due to the request of the board of directors of either Formula or any of its directly held affiliates (other than a termination of his provision of services which is based on actions or omissions by him that will constitute "cause" under his grant agreement with Formula); then, the chief financial officer will be deemed to have complied with clauses (i) or (ii) above. Notwithstanding the foregoing, if a change of control of the Company occurs, then all unvested restricted shares will immediately become vested. Total fair value of the grant was calculated based on the Formula share price on the grant date and equaled \$239 (\$23.9 per share).

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 17:- EMPLOYEE OPTION PLANS (Cont.)

In accordance with the Company's chief financial officer's share based award plan, Asseco's loss of control in the Company resulted in the immediate acceleration of all of his unvested shares under the grant of November 2014, which amounted to 3,125 shares.

In August 2017, Formula's board of directors awarded its chief financial officer additional 10,000 restricted shares under the 2011 plan (the "new restricted shares"). These new restricted shares vest on a quarterly basis over a three-year period, commencing on August 17, 2017 and concluding on August 17, 2020, provided that during such time the chief financial officer will continue to serve as (i) an officer of the Company and/or (ii) an officer in one of the directly held affiliates, except that if he fails to meet the service condition due to the request of the board of directors of either Formula or any of its directly held affiliates (other than a termination of his provision of services which is based on actions or omissions by him that will constitute "cause" under his grant agreement with Formula), then, the chief financial officer will be deemed to have complied with clauses (i) or (ii) above. Notwithstanding the foregoing, if a change of control of the Company occurs, then all unvested new restricted shares will immediately become vested. Total fair value of the grant was calculated based on the Formula share price on the grant date and equaled to \$371 (\$37.1 per share).

The total compensation expense that the Company recorded in its statement of profit or loss for the year ended December 31, 2018 in respect of its chief financial officer (constituting his equity compensation for all of 2018) was \$209.

As of December 31, 2018, all 10,000 new restricted shares granted in August 2017 were deposited with the trustee. These shares included 3,333 ordinary shares constituting the then currently vested portion of the 10,000 new restricted shares that Formula granted to its chief financial officer.

- (iv) In November 2018, Formula's board of directors awarded its chief operational officer 10,000 restricted shares under the 2011 plan (the "restricted shares"). These restricted shares vest on an annual basis over a four-year period, commencing on November 19, 2018 and concluding on November 19, 2022, provided that during such time the chief operational officer will continue to serve as (i) an officer of the Company and/or (ii) an officer in one of the directly held affiliates. Total fair value of the grant was calculated based on the Formula share price on the grant date and equaled \$382 (\$38.2 per share).

The total compensation expense that the Company recorded in its statement of profit or loss for the year ended December 31, 2018 in respect of its chief operational officer (constituting her equity compensation for all of 2018) was \$23.

As of December 31, 2018, all 10,000 new restricted shares granted in November 2018 were deposited with the trustee. None of these shares were then currently vested.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 17:- EMPLOYEE OPTION PLANS (Cont.)c) **Matrix:**

In October, 2015 Matrix approved an agreement with Revava Management Company Ltd. through which Mr. Moti Gutman provides services to Matrix as a chief executive officer, and pursuant to which among other things, Matrix granted Mr. Gutman 225,000 restricted share units (RSU) exercisable into 225,000 ordinary shares of Matrix without an exercise price. The RSU vested in three equal shares portions of 75,000 RSU units, each at December 31 of each year under the agreement, but not before the publication of Matrix's financial statements for the past year, and subject to certain conditions. In 2018, 75,000 restricted share units (RSU) were vested and exercised. As of December 31, 2018, Mr. Gutman does not hold any restricted share units (RSU) from this grant.

In December, 2017 Matrix extended its agreement with Revava Management Company Ltd. for additional five years' term starting on January 1, 2018. As part of the new agreement Matrix awarded Mr. Gutman additional 256,890 (RSUs), which vest on an annual basis over a five-year period, commencing on January 1, 2018 and concludes on December 31, 2022, but not before the publication of Matrix's financial statements for each respective year, and subject to certain conditions.

In April 2015, the board of directors of Matrix approved, following the approval by Matrix's compensation committee, the grant of 1,850,000 options which are exercisable into up to 1,850,000 ordinary shares of Matrix of NIS 1 par value each to 19 senior officers of Matrix or of corporations controlled by it. The exercise price of the options was NIS 19.485 at the date of their grant, subject to adjustments, including upon the distribution of dividends. Half of the options vested on April 1, 2017, a quarter of the options vested on January 1, 2018, and the rest vested on January 1, 2019. When the actual exercise will take place, shares will be allotted, according to a net exercise mechanism. Matrix will not get paid in cash.

In June, 2015, the general shareholder meeting of Matrix approved, after obtaining the approval of Matrix's compensation committee and the Matrix board the grant 300,000 options exercisable for 300,000 ordinary shares of Matrix of NIS 1 par value, without compensation, to the President and Vice Chairman of the Matrix board. The exercise price of the options was NIS 21.39 at the date of their grant, subject to adjustments, including upon the distribution of dividends. Half of the options vested on June 4, 2017, and the equal parts of the remaining options vested on January 1, 2018 and January 1, 2019. The fair value of the options was estimated on the date of grant using the Binomial model based on the terms which are: risk-free interest rate is 0.08% -1.31%, early exercise factor is 30% and expected volatility is 19% -22%. The contractual life of the options is 5 years from the date of grant.

The following table is a summary of employee option activity in Matrix, as of December 31, 2018 and during the year ended December 31, 2018:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (in years)	Aggregate intrinsic value
Outstanding at January 1, 2018	1,100,000	4.33	2.19	9,152
Exercised	587,500	4.06	-	4,578
Granted	256,890	-	5	3,247
Outstanding at December 31, 2018	769,390	2.61	2.19	6,823
Exercisable at December 31, 2018	51,378	-	-	567

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 17:- EMPLOYEE OPTION PLANS (Cont.)

The aggregate intrinsic value in the table above represents the total intrinsic value that would have been received by the option holders had all option holders exercised their options on the respective dates. This value would change based on the change in the market value of Matrix' ordinary shares and the change in the exchange rate between the New Israeli Shekel and dollar. As of December 31, 2018, there was \$1,930 of total unrecognized compensation costs related to non-vested share-based compensation arrangements granted under the Matrix equity incentive plan.

d) Sapiens:

The following table is a summary of employee option activity in Sapiens as of December 31, 2018 and during the year ended December 31, 2018:

	Year ended December 31, 2018			Aggregate intrinsic value
	Amount of options	Weighted average exercise price	Weighted average remaining contractual life (in years)	
Outstanding at January 1, 2018	2,107,413	9.67	4.25	4,084
Granted	317,000	10.20		
Exercised	(223,570)	4.40		
Expired and forfeited	(145,661)	10.79		
Outstanding at December 31, 2018	2,055,182	9.86	3.80	2,594
Exercisable at December 31, 2018	829,133	8.31	2.47	2,134

In 2016, 2017 and 2018, Sapiens granted 310,000, 920,910 and 317,000 stock options to its employees and directors to purchase its shares, respectively. The weighted average grant date fair values of the options granted during the years ended December 31, 2016, 2017 and 2018 were \$4.30, \$4.17 and \$3.43, respectively. The total intrinsic value of options exercised during the years ended December 31, 2016, 2017 and 2018, was \$2,304, \$5,739 and \$1,641, respectively.

The options outstanding under Sapiens' stock option plans as of December 31, 2018 have been separated into ranges of exercise price as follows:

Ranges of exercise price \$	Options outstanding as of December 31, 2018	Weighted Average remaining contractual Term (Years)	Weighted average exercise price \$	Options Exercisable as of December 31, 2018	Weighted Average Exercise price of Options Exercisable \$
0.88-1.48	25,703	1.18	1.08	25,703	1.08
4.12-5.67	103,000	0.83	5.62	103,000	5.62
6.32-6.91	45,750	1.47	6.67	38,250	6.74
7.82	300,000	2.34	7.82	300,000	7.82
8.67-9.18	95,000	3.48	9.10	40,000	9.18
9.33-9.8	413,229	4.33	9.53	157,180	9.44
10.18-10.81	217,500	3.45	10.46	112,500	10.40
11.43-12.53	810,000	4.78	11.54	33,750	12.27
12.62-13.5	45,000	3.78	12.91	18,750	12.80
	2,055,182	3.80	9.86	829,133	8.31

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 17:- EMPLOYEE OPTION PLANS (Cont.)

The total equity-based compensation expense related to all of Sapiens' equity-based awards, recognized for the years ended December 31, 2016, 2017 and 2018, after being adjusted to comply with IFRS, was \$1,981, \$2,201 and \$2,009, respectively. As of December 31, 2018, there was \$3,761 of total unrecognized compensation cost related to non-vested options, which is expected to be recognized over a period of up to four years.

During 2017, 29,500 of the 88,500 restricted shares of Sapiens Decision, the Company's majority-owned subsidiary which were granted to one of the former shareholders of KPI in 2014, vested, thereby reducing the Company's percentage ownership of Sapiens Decision from 94.25% to 92.89%. During 2017, Sapiens Decision granted 122,730 options to certain of its employees to purchase shares of Sapiens Decision.

e) **Magic:**

A summary of employee option activity under the Magic plans as of December 31, 2018 and during the year ended December 31, 2018 are as follows:

	Number of options	Weighted average exercise price	Weighted average remaining contractual term (in years)	Aggregate intrinsic value
Outstanding at January 1, 2018	309,309	4.38	3.97	1,237
Granted	37,500	-		
Exercised	(104,167)	2.99		
Forfeited	(21,875)	6.89		
Outstanding at December 31, 2018	<u>220,767</u>	<u>3.83</u>	<u>3.81</u>	<u>1,684</u>
Exercisable at December 31, 2018	<u>190,767</u>	<u>4.43</u>	<u>2.92</u>	<u>1,456</u>

The aggregate intrinsic value in the table above represents the total intrinsic value that would have been received by the option holders had all option holders exercised their options on the respective dates. This value would change based on the change in the market value of Magic's ordinary shares. Total intrinsic value of options exercised during the years ended December 31, 2016, 2017 and 2018, was \$112, \$502 and \$617, respectively. As of December 31, 2018, there was no unrecognized compensation cost related to non-vested share-based compensation arrangements granted under Magic's plans.

The options outstanding as of December 31, 2018, have been separated into ranges of exercise price categories, as follows:

Ranges of Exercise price \$	Options outstanding	Weighted average remaining contractual life (Years)	Weighted average exercise price \$	Options exercisable	Weighted average exercise price of exercisable options \$
0-1	30,000	9.49	-	-	-
2.01-3	66,000	1.26	2.32	66,000	2.32
3.01-4	73,517	2.77	4.00	73,517	4.00
5.01-6	6,250	4.61	6.00	6,250	6.00
8.01-9	45,000	5.35	8.01	45,000	8.01
	<u>220,767</u>	<u>3.81</u>	<u>3.83</u>	<u>190,767</u>	<u>4.43</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 18:- EMPLOYEE BENEFIT LIABILITIES

Employee benefits consist of post-employment benefits, other long-term benefits and termination benefits.

a) Post-employment benefits:

According to the labor laws and Severance Pay Law in Israel, the Israeli companies in the Group are required to pay compensation to an employee upon dismissal or retirement or to make current contributions in defined contribution plans pursuant to section 14 to the Severance Pay Law, as specified below. These liabilities are accounted for as a post-employment benefit. The computation of the Group's employee benefit liability is made according to the current employment contract based on an employee's salary and employment term which establish the entitlement to receive the compensation.

The post-employment employee benefits are normally financed by contributions classified as a defined benefit plan or as a defined contribution plan, as detailed below.

1) Defined contribution plans:

Section 14 of the Severance Pay Law, 1963 applies to part of the compensation payments, pursuant to which the fixed contributions paid by the Group into pension funds and/or policies of insurance companies release the Group from any additional liability to employees for whom said contributions were made. These contributions and contributions for benefits represent defined contribution plans.

2) Defined benefit plans:

The Group accounts for that part of the payment of compensation that is not covered by contributions in defined contribution plans, as above, as a defined benefit plan for which an employee benefit liability is recognized and for which the Group deposits amounts in central severance pay funds and in qualifying insurance policies.

3) Other long-term benefits:

According to Matrix's agreements with one of its senior officers, he is entitled to an adaptation bonus in an amount of 12 salaries. This liability has been recognized as a defined benefit.

b) Composition of defined benefit plans is as follows:

	December 31,	
	2018	2017
Defined benefit obligation	81,556	87,316
Fair value of plan assets	(72,672)	(78,284)
Net defined benefit liability	8,884	9,032

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 19:- COMMITMENTS AND CONTINGENCIES

a) Liens:

- 1) A lien has been incurred by Formula over a certain portion of its investments in outstanding shares of Matrix, Magic and Sapiens, pursuant to a credit agreement with a financial institution entered into in January 2014, and in connection with the issuance of Formula's Series A Secured Debentures, issued by Formula in September 2015 on the TASE (see Notes 14 and 15).
- 2) Composition of pledged shares of Matrix, Magic and Sapiens owned by Formula as of December 31, 2018 is as follows:

	December 31, 2018	
	Financial institution credit agreement	Formula's Series A Secured Debentures
Matrix ordinary shares, par value NIS 1.0 per share	5,263,615	4,128,865
Magic ordinary shares, par value NIS 0.1 per share	2,117,143	5,825,681
Sapiens common shares, par value €0.01 per share	1,410,533	1,260,266

- 3) In January 2018, following the private placement of additional NIS 150,000 par value Series A Secured Debentures, Formula pledged additional 1,692,954 shares of Matrix and 3,487,198 shares of Magic (see Note 15).
- 4) In January 2019, the Company unpledged, in accordance with the financial institution's credit agreement, 3,694,517 shares of Matrix, 1,356,820 shares of Magic and 898,613 shares of Sapiens.
- 5) In March 2019, following the offering of Formula's new Series C Secured Debentures of NIS 300,000 par value, Formula pledged 6,031,761 shares of Matrix, 2,411,474 shares of Magic and 2,957,590 shares of Sapiens (see Note 15).

b) Guarantees:

As of December 31, 2018, the Group provided performance bank guarantees in an amount of approximately \$27,800 as security for its subsidiaries' performance of various contracts with customers and suppliers. As of December 31, 2018, the Group provided bank guarantees in an aggregate amount of approximately \$4,700 as security for its subsidiaries' rent to be paid for its leased offices. As of December 31, 2018, the Group had restricted bank deposits of \$800 in favor of the bank guarantees.

c) Covenants:

In connection with the Group's debentures and credit facility agreements with banks and other financial institutions, as of December 31, 2018, the Group committed to the following:

1) Formula

i) Liability to Financial Institution

In the context of Formula's credit facility obtained from a financial institution, Formula has undertaken to maintain the following financial covenants, as they will be expressed in its financial statements, as described:

- a. Formula shareholders' equity (not including minority interests) shall not be less than \$160 million at all times.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 19:- COMMITMENTS AND CONTINGENCIES (Cont.)

- b. The ratio of Formula shareholders' equity (not including minority interests) to total consolidated assets will not be less than 20%.
- c. The ratio of Company's financial debts less cash, short-term deposits and short-term marketable securities to the annual EBITDA will not exceed 3.5 (all based on the Company's consolidated financial statements).
- d. The ratio of Company's financial debts less cash, short-term deposits and short-term marketable securities to the total assets will not exceed 30% (all based on the Company's consolidated financial statements).
- e. Formula's financial liabilities in its stand-alone balance sheet shall not be higher than NIS 450 million (approximately \$130 million).
- f. Formula will not create any pledge on all or part of its property and assets in favor of any third party and will not provide any guarantee to secure any third party's debts without the financial institution's consent.
- g. Formula will not sell and/or transfer all or part of its assets to others in any manner whatsoever without the financial institution's advance written consent, unless it is done in the ordinary course of business.
- h. Formula committed not to distribute dividends except for if the ratio of the Company's unpaid principal amount of the loan to the fair market value of its collaterals will not exceed 50%, and if the distribution will not cause its cash, short-term deposits and short-term marketable securities to be less than NIS 45 million (approximately \$13 million), or if the dividend will not exceed 75% of accumulated profits accrued from the date of which the loan was granted until the distribution.

ii) Formula's Debentures

In accordance with Formula's indenture for its Series A Secured Debentures and Series B Convertible Debentures, Formula has undertaken to maintain the following financial covenants and obligations:

- a. A covenant not to distribute dividends unless (i) Formula shareholders' equity (not including minority interests) shall not be less than \$250 million, (ii) Formula's net financial indebtedness (financial indebtedness net of cash, marketable securities, deposits and other liquid financial instruments) shall not exceed 65% of net CAP (which is defined financial indebtedness, net, plus shareholders' equity), and (iii) the amount of the distributions shall be equal to profits for the years ended December 31, 2014 and 2015 and 75% of profits accrued from January 1, 2016 until the distribution and (iv) no event of default shall have occurred; and

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 19:- COMMITMENTS AND CONTINGENCIES (Cont.)

- b. Financial covenants, including (i) the equity attributable to the shareholders of Formula, as reported in Formula's annual or quarterly financial statements, shall not be less than \$160 million, (ii) Formula's net financial indebtedness (financial indebtedness net of cash, marketable securities, deposits and other liquid financial instruments) shall not exceed 65% of net CAP (which is defined as financial indebtedness, net, plus shareholders equity) and (iii) at all times, Formula's cash balance will not be less than the annual interest payment (compounded) for the unpaid principal amount of the Series B debentures.
- c. Standard events of default including among others:
 - 1. Suspension of trading of the debentures on the TASE over a period of 60 days;
 - 2. If the rating of the debentures is less than BBB- by Standard and Poors Maalot or equivalent rating of other rating agencies;
 - 3. Failure to have the debentures rated over a period of 60 days;
 - 4. If there is a change in control without consent of the rating agency; and
 - 5. If Formula fails to continue to control any of its subsidiaries.

2) Matrix

In the context of Matrix's engagements with banks for receiving credit facilities, Matrix has undertaken to maintain the following financial covenants, as they are expressed in its financial statements, as described:

- (i) The total rate of Matrix debts and liabilities to banks with the addition of debts in respect of debentures that have been and/or will be issued by it and shareholders' loans that have been and/or will be provided by it (collectively, the "debts") will not exceed 40% of its total balance sheet.
- (ii) The ratio of Matrix debts less cash to the annual EBITDA will not exceed 3.5.
- (iii) Matrix equity shall not be lower than NIS 275 million (approximately \$73.4 million) at all times. As of December 31, 2018, Matrix's equity was approximately NIS 714 million (approximately \$190.5 million).
- (iv) Matrix balances of cash and short-term investments in its balance sheet shall not be lower than NIS 50 million (approximately \$13.3 million).
- (v) In the event that Formula ceases to hold 30% of Matrix share capital or is no longer the largest shareholder in Matrix, the credit may be placed for immediate repayment.
- (vi) Matrix has committed that the rate of ownership and control of Matrix IT-Systems shall never be below 50.1%.
- (vii) Matrix will not create any pledge on all or part of its property and assets in favor of any third party and will not provide any guarantee to secure any third party's debts as they are today and as they will be without the banks' consent (except for a first rate fixed pledge on an asset which acquisition will be financed by a third party and which the pledge will be in his favor).
- (viii) Matrix will not sell and/or transfer all or part of its assets to others in any manner whatsoever without the banks' advance written consent, unless it is done in the ordinary course of business.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 19:- COMMITMENTS AND CONTINGENCIES (Cont.)

3) Sapiens

In accordance with the indenture for Sapiens' Series B Debentures, Sapiens has undertaken to maintain a number of conditions and limitations on the manner in which it can operate its business, including limitations on its ability to undergo a change of control, distribute dividends, incur a floating charge on its assets, or undergo an asset sale or other change that results in fundamental change in its operations. Sapiens Series B Debentures deed of trust also requires it to comply with certain financial covenants, as described below. A breach of the financial covenants for more than two successive quarters or a substantial downgrade in the rating of the debentures (below BBB-) could result in the acceleration of Sapiens' obligation to repay the debentures. The deed of trust includes the following provisions:

- (i) a negative pledge, subject to certain exceptions;
- (ii) a covenant not to distribute dividends unless (i) Sapiens shareholders' equity (not including minority interests) shall not be less than \$160 million, (ii) Sapiens net financial indebtedness (financial indebtedness net of cash, marketable securities, deposits and other liquid financial instruments) does not exceed 65% of net CAP (which is defined as financial indebtedness, net, plus shareholders equity, including minority interest), (iii) the amount of the dividend does not exceed Sapiens profits for the year ended December 31, 2016 and the first three quarters of the year ended December 31, 2017, plus 75% of Sapiens profits as of September 1, 2017 and up to the date of distribution, and (iv) no event of default shall have occurred.
- (iii) financial covenants, including (i) the equity attributable to the shareholders of Sapiens (not including minority interests), as reported in its annual or quarterly financial statements, will not be less than \$120 million, and (ii) Sapiens' net financial indebtedness (financial indebtedness net of cash, marketable securities deposits and other liquid financial instruments) shall not exceed 65% of net CAP (which is defined as financial indebtedness, net, plus shareholders equity, including deposits and other liquid financial instruments).

4) Magic

Under the terms of the loan with an Israeli financial institution, Magic has undertaken to maintain the following financial covenants, as they will be expressed in its consolidated financial statements (in accordance with US GAAP), as described below:

- (i) Total equity attributable to Magic' shareholders shall not be lower than \$100,000 at all times;
- (ii) Magic's consolidated cash and cash equivalents and marketable securities available for sale shall not be less than \$10,000.
- (iii) The ratio of Magic's consolidated total financial debts to consolidated total assets will not exceed 50%.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 19:- COMMITMENTS AND CONTINGENCIES (Cont.)

(iv) The ratio of Magic's total financial debts less cash, short-term deposits and short-term marketable securities to the annual EBITDA will not exceed 3.25 to 1; and

(v) Magic shall not create any pledge on all of its property and assets in favor of any third party without the financial institution's consent.

As of December 31, 2018, each of Formula, Matrix, Sapiens and Magic is in compliance with all of its financial covenants.

d) Legal proceedings:

- 1) In September 2016, an Israeli software company, which was previously involved in an arbitration proceeding with Magic in 2015 and won damages from it for \$2.4 million, filed a lawsuit seeking damages of NIS 34,106 against Magic and one of its subsidiaries. This lawsuit was filed as part of an arbitration proceeding. In the lawsuit, the software company claimed that warning letters that Magic sent to its clients in Israel and abroad, warning those clients against the possibility that the conversion procedure offered by the software company may amount to an infringement of Magic's copyrights (the "Warning Letters"), as well as other alleged actions, have caused the software company damages resulting from loss of potential business. The lawsuit is based on rulings given in the 2015 arbitration proceeding in which it was allegedly ruled that the Warning Letters constituted a breach of a non-disclosure agreement (NDA) signed between the parties. Magic rejects the claims by the Israeli software company and moved to dismiss the lawsuit entirely. At this point, all the relevant motions have been filed and all witnesses deposed. The Group is unable to make a reasonably reliable estimate of its chances of successfully defending this lawsuit.
- 2) In February 2018, Comm-IT Ltd., a subsidiary of Magic, commenced an action against a customer for payment of an overdue amount in the Supreme Court of the State of New York, New York County. In April 2018, the customer filed an answer in the action that included counterclaims asserting causes of action for breach of contract, fraud, and trespass to chattel. In May 2018, Comm-IT filed a reply to the counterclaims. The parties have agreed to participate in a mediation before a neutral mediator in March 2019. While it appears that the allegations against Comm-IT probably do not have merit, it is difficult to predict at this point whether Comm-IT's liability is remote or probable.

In addition to the above-described legal proceedings, from time to time, Formula and/or its subsidiaries and affiliates are subject to legal, administrative and regulatory proceedings, claims, demands and investigations in the ordinary course of business, including claims with respect to intellectual property, contracts, employment and other matters. The Group accrues a liability when it is both probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Significant judgment is required in the determination of both the probability and as to whether a loss is reasonably estimable. These accruals are reviewed at least quarterly and adjusted to reflect the impact of negotiations, settlements, rulings, advice of legal counsel and other information and events pertaining to a particular matter. The Group intends to defend itself vigorously against the above claims, and it generally intends to vigorously defend any other legal claims to which it is subject. While for most litigations, the outcome is difficult to determine, to the extent that there is a reasonable possibility that the losses to which the Group may be subject could exceed the amounts (if any) that it has already accrued, the Group attempts to estimate such additional loss, if reasonably possible, and disclose it (or, if it is an immaterial amount, indicate accordingly). The aggregate provision that the Group has recorded for all other legal proceedings (other than the particular material proceedings described above) is not material.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 19:- COMMITMENTS AND CONTINGENCIES (Cont.)

e) Operating lease commitments:

The following are details of the Group's future minimum lease commitments for facilities and equipment, office space and motor vehicles under non-cancelable operating leases as of December 31, 2018:

2019	28,262
2020	20,125
2021	15,783
2022	10,064
2023 and Thereafter	24,778
	<u>99,012</u>

Rent expenses for the years 2016, 2017 and 2018 were approximately \$25,411, \$28,343 and \$30,023 respectively.

Certain subsidiaries have leases motor vehicles under cancelable lease agreements, with an option to be released from those lease agreements, which may result in penalties ranging between one and three times lease monthly cost.

f) Royalty commitments:

Sapiens Technologies (1982) Ltd. ("Sapiens Technologies"), a wholly owned subsidiary of Sapiens incorporated in Israel, was partially financed under programs sponsored by the Israel Innovation Authority ("IIA"), formerly the Office of the Chief Scientist ("OCS") for the support of certain research and development activities conducted in Israel. In exchange for participation in the programs by the IIA, Sapiens Technologies agreed to pay 3.5% of total net consolidated license and maintenance revenue and 0.35% of the net consolidated consulting services revenue related to the software developed within the framework of these programs based on an understanding with IIA reached in January 2012. The royalties will be paid up to a maximum amount equaling 100%-150% of the grants provided by the IIA, linked to the dollar, and for grants received after January 1, 1999, bear annual interest at a rate based on LIBOR.

As of December 31, 2018, the estimated amount due to IIA amounted to \$1,714. As of December 31, 2018, the Group had a contingent liability to pay royalties of \$6,204.

g) Insurance:

The Company and its subsidiaries and affiliates insure themselves in bodily injury and property damage insurance policies, including third party, professional liability and employer's liability insurance policies. Formula, Sapiens and Magic directors and officers (D&O) are insured under an "umbrella" policy for insurance of directors and officers including D&O side A DIC policy (another layer of protection for officers) acquired by the Company for itself and its subsidiaries, for a period of 12 months from December 18, 2018.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 20:- EQUITY

The composition of the Company's share capital is as follows:

	December 31, 2018			December 31, 2017		
	Authorized	Issued	Outstanding	Authorized	Issued	Outstanding
Ordinary shares, NIS 1 par value each	25,000,000	15,318,958	14,750,338	25,000,000	15,307,402	14,738,782

- a. Formula's ordinary shares, par value NIS 1 per share, are traded on the TASE, and Formula's ADSs, each representing one ordinary share, are traded on the NASDAQ.
- b. Formula holds 568,620 of its ordinary shares.
- c. In January 2016, Formula declared a cash dividend of approximately \$5,008 (or \$0.34 per share) to shareholders of record on January 20, 2016 that was paid on February 4, 2016.
- d. In June 2016, Formula declared a cash dividend of approximately \$5,008 (or \$0.34 per share) to shareholders of record on July 13, 2016 that was paid on July 28, 2016.
- e. In December 2016, Formula declared a cash dividend of approximately \$7,070 (or \$0.48 per share) to shareholders of record on December 30, 2016 that was paid on January 12, 2017.
- f. In September 2017, Formula declared a cash dividend of approximately \$5,011 million (or \$0.34 per share) to shareholders of record on October 17, 2017 that was paid on November 2, 2017.
- g. In May 2018, Formula declared a cash dividend of approximately \$5,012 million (or \$0.34 per share) to shareholders of record on June 5, 2018 that was paid on June 20, 2018.
- h. In December 2018, Formula declared a cash dividend of approximately \$5,015 million (or \$0.34 per share) to shareholders of record on December 31, 2018 that was paid on January 16, 2019.
- i. For information concerning Formula's employees and officers share-based plans, see Note 17.
- j. For information concerning Formula's issuance of shares as a result of conversions prior to maturity of Formula's Series B Convertible Debentures, see Note 17.

NOTE 21:- TAXES ON INCOME

- a. Israeli taxation:

1) Corporate tax rate in Israel:

The Israeli corporate income tax rate was 25% in 2016, 24% in 2017 and 23% in 2018.

In December 2016, the Israeli Knesset (parliament) approved the Economic Efficiency Law (Legislative Amendments for Applying the Economic Policy for the 2017 and 2018 Budget Years) - 2016, which reduced the corporate income tax rate to 24% (instead of 25%) effective from January 1, 2017 and to 23% effective from January 1, 2018.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 21:- TAXES ON INCOME (Cont.)**2) Tax benefits under the Israeli Law for the Encouragement of Capital Investments, 1959 (the "Investment Law"):**

Certain of Sapiens' Israeli subsidiaries have been granted "Approved Enterprise" Status under the Investment Law. The above Israeli subsidiaries have elected the alternative benefits program, waiver of grants in return for tax exemptions. Pursuant thereto, the income of the subsidiaries derived from the "Approved Enterprise" program is tax-exempt for two years and may enjoy a reduced tax rate of 10%-25% for up to a total of eight years (subject to an adjustment based upon the foreign investors' ownership in Sapiens). Under the terms of the Approved Enterprise program, income that is attributable to one of Sapiens' Israeli subsidiaries was exempt from income tax for a period of two years commencing in 2014. If a dividend is distributed out of tax exempt profits, as above, Sapiens will become liable for tax at the rate applicable to its profits from the approved enterprise in the year in which the income was earned, as if it was not under the Approved Enterprise track. Sapiens' policy is not to distribute such a dividend.

Entitlement to the above benefits is conditional upon the fulfilling the conditions stipulated by the above law, regulations published thereunder and the letters of approval for the specific investments in "Approved Enterprises". In the event of failure to comply with these conditions, the benefits may be cancelled, and Sapiens may be required to refund the amount of the benefits, in whole or in part, including interest and CPI linkage.

On December 29, 2010, the Knesset approved an amendment to the Investment Law for the Encouragement of Capital Investments, 1959 ("2011 Amendment"). According to the 2011 Amendment, a reduced uniform corporate tax rate for exporting industrial enterprises (over 25%) was established. The reduced tax rate will not be program dependent and will apply to the "Preferred Enterprise's" (as such term is defined in the Investment Law) entire income. Pursuant to the 2011 Amendment, a "Preferred Enterprise" is entitled to a reduced corporate tax rate of 16%. The Amendment also prescribes that any dividends distributed to individuals or foreign residents from the preferred enterprise's earnings as above will be subject to tax at a rate of 20%.

In 2011, Magic and one of its Israeli subsidiaries filed a notice to the Israeli tax authorities to apply for the new benefits under the 2011 Amendment, and therefore were subjected to the amended tax rate of 16% for the tax years 2011-2016.

In 2015, certain of Sapiens' Israeli subsidiaries filed a notice to the Israeli tax authorities to apply for the new benefits under the 2011 Amendment, and therefore were subjected to the amended tax rate of 16% for the tax years 2014-2016.

New Amendment - Preferred Technology Enterprise

In December 2016, the Israeli Knesset passed Amendment 73 to the Investment Law which included a number of changes to the Investments Law regimes. Certain changes were scheduled to come into effect beginning January 1, 2017, provided that regulations are promulgated by the Finance Ministry to implement the "Nexus Principles" based on OECD guidelines recently published as part of the Base Erosion and Profit Shifting (BEPS) project. The regulations were approved on May 1, 2017 and accordingly, these changes have come into effect. Applicable benefits under the new regime include:

Introduction of a benefit regime for "Preferred Technology Enterprises" granting a 12% tax rate in central Israel – on income deriving from intellectual property, subject to a number of conditions being fulfilled, including a minimal amount or ratio of annual R&D expenditure and R&D employees, as well as having at least 25% of annual income derived from exports. Preferred Technology Enterprise ("PTE") is defined as an enterprise which meets the aforementioned conditions and for which total consolidated revenues of its parent company and all subsidiaries are less than NIS 10 billion.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 21:- TAXES ON INCOME (Cont.)

A 12% capital gains tax rate on the sale of a preferred intangible asset to a foreign affiliated enterprise, provided that the asset was initially purchased from a foreign resident at an amount of NIS 200 million or more.

A withholding tax rate of 20% for dividends paid from PTE income (with an exemption from such withholding tax applying to dividends paid to an Israeli company). Such rate may be reduced to 4% on dividends paid to a foreign resident company, subject to certain conditions regarding percentage of foreign ownership of the distributing entity.

Starting 2017, certain of the Group's subsidiaries' taxable income in Israel is entitled to a preferred 12% tax rate under Amendment 73 to the Investment Law.

3) Tax benefits under the Israeli Law for the Encouragement of Industry (Taxes), 1969:

It is Formula's management's belief that certain of its Israeli investees currently qualify as an "Industrial Company," within the meaning of the Law for the Encouragement of Industry (Taxes), 1969 (the "Industrial Encouragement Law"). That Industrial Encouragement Law defines an "Industrial Company" as a company that is resident in Israel and that derives at least 90% of its income in any tax year, other than income from defense loans, capital gains, interest and dividends, from an enterprise whose major activity in a given tax year is industrial production. Under the Industrial Encouragement Law, these Israeli subsidiaries are entitled to amortization of the cost of purchased know-how and patents over an eight-year period for tax purposes as well as accelerated depreciation rates on equipment and buildings. Eligibility for the benefits under the Industrial Encouragement Law is not subject to receipt of prior approval from any governmental authority.

4) Foreign Exchange Regulations:

Under the Foreign Exchange Regulations, certain Israeli subsidiaries of the Group calculate their tax liability in dollars according to certain orders. The tax liability, as calculated in dollars is translated into NIS according to the exchange rate as of December 31 of each year.

5) Structural changes in Matrix:

In November 2018, a tax ruling was signed determining that effective December 31, 2017 as part of a merger process, two subsidiaries of Matrix will transfer all their assets and liabilities subject to the provisions of section 104 of the Income Tax Ordinance.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 21:- TAXES ON INCOME (Cont.)

b. Non-Israeli investees:

Non-Israeli subsidiaries are taxed according to the tax laws in their respective country of residence. Deferred income taxes were provided in relation to undistributed earnings of non-Israeli subsidiaries, which the Group intends to distribute in the near future.

The Group intends to permanently reinvest undistributed earnings in the foreign subsidiaries in which earnings arose, in the vast majority of its subsidiaries. If the earnings, for which deferred taxes were not provided, were distributed in the form of dividends or otherwise, the Group would be subject to additional Israeli income taxes (subject to an adjustment for foreign tax credits) and non-Israeli withholding taxes.

The amount of undistributed earnings of foreign subsidiaries that are considered to be reinvested as of December 31, 2018 was \$73,651. However, a determination of the amount of the unrecognized deferred tax liability for temporary difference related to those undistributed earnings of foreign subsidiaries is not practicable due to the complexity of the structure of our group of investees for tax purposes and the difficulty of projecting the amount of future tax liability.

The amount of cash and cash equivalents that were held by the Group's investees outside of Israel and would have been subject to income taxes if distributed as dividend as of December 31, 2017 and 2018 was \$48,628 and \$50,817, respectively.

c. Tax Reform- United States of America

The U.S. Tax Cuts and Jobs Act of 2017 ("TCJA") was approved by US Congress on December 20, 2017 and signed into law by US President Donald J. Trump on December 22, 2017. This legislation makes complex and significant changes to the U.S. Internal Revenue Code. Such changes include a reduction in the corporate tax rate and limitations on certain corporate deductions and credits, among other changes.

The TCJA reduces the U.S. federal corporate income tax rate from 35% to 21% effective January 1, 2018. In addition, the TCJA makes certain changes to the depreciation rules and implements new limits on the deductibility of certain expenses and deduction.

Except for one US subsidiary which has a share interest in a subsidiary in India, all of the other Group's subsidiaries in the United States do not have any foreign subsidiaries and, therefore, the remaining provisions of the TCJA have no material impact on the Group's results of operations.

The Group re-measured its U.S. deferred tax assets and liabilities, based on the rates at which they are expected to reverse in the future. The estimated tax benefit recorded related to the re-measurement of the provisional net deferred taxes was approximately \$ 4,228 for the year ended December 31, 2017.

d. Net operating loss carried forward:

As of December 31, 2018, Formula and its subsidiaries have cumulative losses for tax purposes totaling approximately \$152,107, of which \$136,397 was in respect of Israeli subsidiaries and approximately \$15,710 of which was in respect of subsidiaries abroad.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 21:- TAXES ON INCOME (Cont.)

1) Formula

As of December 31, 2018, Formula stand-alone had cumulative carry forward tax losses in Israel totaling approximately NIS 257,460 (approximately \$68,693), which can be carried forward and offset against taxable income in the future for an indefinite period.

2) Matrix

As of December 31, 2018, certain subsidiaries of Matrix had operating carry-forward tax losses totaling approximately NIS 119,431 (approximately \$31,865), which can be carried forward and offset against taxable income in the future for an indefinite period.

3) Magic

As of December 31, 2018, certain subsidiaries of Magic had operating carry forward tax losses totaling approximately \$14,418, which can be carried forward and offset against taxable income in the future for an indefinite period.

4) Sapiens

As of December 31, 2018, certain subsidiaries of Sapiens had carry-forward tax losses totaling approximately \$26,250. Most of these carry-forward tax losses have no expiration date.

5) Insync

As of December 31, 2018 Insync did not have any carry forward tax losses.

6) Michpal

As of December 31, 2018 Michpal did not have any carry forward tax losses.

e. Income tax assessments:

Formula and its subsidiaries are routinely examined by various tax authorities. Below is a summary of the income tax assessments of Formula and its subsidiaries:

1) Formula

Formula has received final tax assessments (or assessments that are deemed final) through the tax year 2013.

2) Matrix

Matrix and its subsidiaries have received final tax assessments (or assessments that are deemed final) through the tax year 2013.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 21:- TAXES ON INCOME (Cont.)

3) Magic

Magic and its Israeli subsidiaries have received final tax assessments (or assessments that are deemed final) through the year 2013.

4) Sapiens

Tax assessments filed by some of Sapiens' Israeli subsidiaries through the year 2012 are considered to be final.

f. Deferred tax liabilities, net:

1) Presentation in consolidated statements of financial position:

	December 31,	
	2018	2017
Deferred taxes assets	\$ 14,214	\$ 15,878
Deferred tax liabilities	(34,800)	(36,605)
	<u>\$ (20,586)</u>	<u>\$ (20,727)</u>

2) Composition:

	December 31,	
	2018	2017
Net operating losses carried forward	\$ 4,579	\$ 8,081
Intangibles and fixed assets	(32,895)	(35,834)
Differences in measurement basis (cash basis for tax purposes)	(1,571)	(4,298)
Other	9,301	11,324
	<u>\$ (20,586)</u>	<u>\$ (20,727)</u>

g. Pre-tax income:

	Year ended December 31,		
	2018	2017	2016
Domestic (Israel)	\$ 81,317	\$ 38,204	\$ 51,552
Foreign	20,379	14,607	25,711
Total	<u>\$ 101,696</u>	<u>\$ 52,811</u>	<u>\$ 77,263</u>

h. Taxes on income (tax benefit) consist of the following:

	Year ended December 31,		
	2018	2017	2016
Current taxes	\$ 30,302	\$ 22,375	\$ 20,952
Deferred taxes	(6,001)	(9,004)	211
Total	<u>\$ 24,301</u>	<u>\$ 13,371</u>	<u>\$ 21,163</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 21:- TAXES ON INCOME (Cont.)

i. Theoretical tax:

The following table presents reconciliation between the theoretical tax expense, assuming that all income was taxed at statutory tax rates, and the actual income tax expense, as recorded in the Group's consolidated statements of profit or loss:

	Year ended December 31,		
	2018	2017	2016
Income before income taxes, as per the statement of operations	\$ 101,696	\$ 52,811	\$ 77,263
Statutory tax rate in Israel	23%	24%	25%
Tax computed at the statutory tax rate	23,390	12,675	19,316
Non-deductible expenses (non-taxable income) net and tax-deductible costs not included in the accounting costs	1,393	1,522	978
Effect of different tax rates	379	843	(1,143)
Effect of "Approved, Beneficiary or Preferred Enterprise" status	(1,233)	(252)	(1,338)
Group's share of profits of companies accounted for at equity	(86)	(270)	(87)
Deferred taxes on current losses (utilization of carry forward losses) and temporary differences for which a valuation allowance was provided, net	(796)	4,695	1,442
Effect of change in tax rates	-	(5,796)	112
Taxes in respect of prior years	(485)	(227)	1,718
Uncertain tax positions	2,703	342	(234)
Other	(964)	(439)	399
Taxes on income	\$ 24,301	\$ 13,371	\$ 21,163

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 21:- TAXES ON INCOME (Cont.)

j. Uncertain tax positions:

A reconciliation of the beginning and ending amount of total unrecognized tax benefits in Formula's subsidiaries is as follows:

Balance as of December 31, 2015	2,492
Increase due to consolidation in a subsidiary	227
Decrease related to prior years' tax positions	(286)
Increase related to current year tax positions	847
Balance as of December 31, 2016	3,280
Increase due to consolidation in a subsidiary	66
Decrease related to prior years' tax positions	(135)
Increase related to current year tax positions	813
Balance as of December 31, 2017	4,024
Decrease related to prior years' tax positions	(198)
Increase related to current year tax positions	2,775
Balance as of December 31, 2018	<u>6,601</u>

Although the Group believes that it has adequately provided for any reasonably foreseeable outcomes related to tax audits and settlement, there is no assurance that the final tax outcome of its tax audits will not be different from that which is reflected in the Group's income tax provisions. Such differences could have a material effect on the Group's income tax provision, cash flow from operating activities and net income in the period in which such determination is made.

The entire balance of unrecognized tax benefits, if recognized, would reduce the Group's annual effective tax rate.

NOTE 22:- SUPPLEMENTARY FINANCIAL STATEMENT INFORMATION

a. Non-controlling interest in material partially owned subsidiaries:

	December 31,	
	2018	2017
Matrix and its subsidiaries	\$ 106,667	\$ 104,750
Sapiens and its subsidiaries	193,832	193,973
Magic and its subsidiaries	137,158	114,925
Other	110	72
	<u>\$ 437,767</u>	<u>\$ 413,720</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 22-- SUPPLEMENTARY FINANCIAL STATEMENT INFORMATION (Cont.)

b. Financial income and expenses:

	Year ended December 31,		
	2018	2017	2016
Financial expenses:			
Financial expenses related to liabilities in respect of business combinations	\$ 1,108	\$ 765	\$ 2,602
Interest expenses on loans and borrowings	6,891	7,700	6,061
Financial costs related to Debentures	5,479	2,832	1,959
Bank charges, negative foreign exchange differences and other financial expenses	2,374	18,573	6,972
	<u>15,852</u>	<u>29,870</u>	<u>17,594</u>
Financial income:			
Income from marketable securities and embedded derivative	832	138	865
Interest income from deposits, positive foreign exchange differences and other financial income	6,730	8,613	5,143
	<u>7,562</u>	<u>8,751</u>	<u>6,008</u>
Total	<u>\$ 8,290</u>	<u>\$ (21,119)</u>	<u>\$ (11,586)</u>

c. Geographical information:

1) The Group's property and equipment is located as follows:

	December 31,	
	2018	2017
Israel	\$ 22,401	\$ 22,615
United States	4,033	4,369
Europe	1,307	1,412
Japan	282	302
Other	1,159	1,109
Total	<u>\$ 29,182</u>	<u>\$ 29,807</u>

i) Revenues:

The Group's revenues classified by geographic area (based on the location of customers) are as follows:

	Year ended December 31,		
	2018	2017	2016
Israel	\$ 893,605	\$ 846,298	\$ 663,341
International:			
United States	418,148	322,892	283,297
Europe	141,316	131,025	115,444
Africa	13,726	24,370	2,296
Japan	11,053	15,763	38,310
Other (mainly Asia pacific)	15,140	14,791	5,933
Total	<u>\$ 1,492,988</u>	<u>\$ 1,355,139</u>	<u>\$ 1,108,621</u>

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 22:- SUPPLEMENTARY FINANCIAL STATEMENT INFORMATION (Cont.)

d. Earnings per share:

The following table presents the computation of basic and diluted net earnings per share for the Group:

	Year ended December 31,		
	2018	2017	2016
<u>Numerator:</u>			
Basic earnings per share – net income attributable to equity holders of the Company	\$ 32,365	\$ 10,352	\$ 22,455
Diluted earnings per share - net income attributable to equity holders of the Company	\$ 33,376	\$ 10,085	\$ 23,207
<u>Denominator:</u>			
Basic earnings per share - weighted average shares outstanding	14,740	14,437	14,214
Effect of dilutive securities	831	295	1,311
Diluted earnings per share – adjusted weighted average shares outstanding	15,571	14,732	15,525
Basic net earnings per share	2.20	0.72	1.58
Diluted net earnings per share	2.14	0.68	1.49

NOTE 23:- OPERATING SEGMENTS

a. General:

The Group is engaged through five directly held subsidiaries; Matrix; Magic; Sapiens; Insync and Michpal; and one jointly controlled entity: TSG, in providing software services, proprietary and non-proprietary software solutions, software product marketing and support, computer infrastructure and integration solutions and training and integration.

Matrix

Matrix IT Ltd. is Israel's leading IT services company. Matrix provides software solutions and services, software development projects, outsourcing, integration of software systems and services – all in accordance with its customers' specific needs. Matrix also provides upgrading and expansion of existing software systems.

Matrix operates through its directly and indirectly held subsidiaries in the following segments: (1) Information Technology (IT) Software solutions and services, Consulting & Management in Israel; (2) Information Technologies (IT) Software solutions and services in the U.S; (3) Training and integration; (4) Computer infrastructure and integration solutions; and, (5) Software product marketing and support.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 23-- OPERATING SEGMENTS (Cont.)*Information Technologies (IT) Software solutions and services, Consulting & Management in Israel:*

The software solutions and services in Israel provided by Matrix consist mainly of providing tailored software solutions and upgrading and expanding existing software systems. These services include, among others, developing customized software, adapting software to the customer's specific needs, implementing software and modifying it based on the customer's needs, outsourcing, project management, software testing and QA and integrating all or part of the above elements. The scope of work invested in each element varies from one customer to the other. In 2018, activity in Software solutions and value added services in Israel accounted for approximately 61% of Matrix's revenues for approximately 45% of its operating income, respectively.

Information Technologies (IT) Software solutions and services in the U.S.:

Matrix activities in this segment are primarily providing software solutions and services of Governance Risk and Compliance ("GRC") experts, including activities on the following topics: risk management, management and prevention of fraud, Anti-Money Laundering and securing compliance with the regulations on these issues, through Matrix-IFS (formerly Exzac Inc.), a wholly owned subsidiary of Matrix, as well as providing solutions and specialized technological services in areas such as: portals, BI (Business Intelligence) DBA (Data Base Administration), CRM (Customer Relation Management) and EIM (Enterprise Information Management), and in addition, the activity in this segment includes IT help desk services specializing in healthcare and software product distribution services particularly IBM products. The activity in this segment is performed mostly through Matrix IFS and Xtivia Technologies Inc., wholly owned subsidiaries of Matrix. In 2018, activity in the U.S accounted for approximately 12% of Matrix's revenues and for approximately 26% of its operating income, because of higher operating gross margin in the U.S.

Training and integration:

Matrix's activities in this segment consist of operating a network of high-tech training and instruction centers which provide application courses, professional training courses and advanced professional studies in the high-tech industry, courses of soft skills and management training and provision of training and implementation of computer systems. In 2018, activity in training and integration accounted for approximately 5% of Matrix's revenues and for approximately 8% of its operating income, respectively.

Computer infrastructure and integration solutions:

Matrix's activities in this segment is primarily providing computer solutions to computer and communications infrastructures, marketing and sale of computers and peripheral equipment to business customers, providing related services, and cloud computing solutions (through the business specializing unit of the Company - Cloud Zone) and a myriad of services regarding Database services and Big data services (through the specialized business unit Data zone). In 2018, activity in Computer infrastructure and integration solutions accounted for approximately 17% of Matrix's revenues and for approximately 11% of its operating income, respectively.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 23-- OPERATING SEGMENTS (Cont.)*Software product marketing and support:*

Matrix's activities in this segment include marketing, distributing and support for various software products, the principal of which are CRM, computer systems management infrastructures, web world content management, database and data warehouse mining, application integration, database and systems, data management and software development tools. In 2018, activity in software product marketing and support accounted for about 5% of Matrix's revenues and for approximately 10% of its operating income, respectively.

Sapiens

Sapiens is a leading global provider of software solutions for the insurance industry. Sapiens' extensive expertise is reflected in its innovative software platforms, suites, solutions and services for property & casualty (P&C); life, pension & annuity (L&A); reinsurance; financial and compliance (F&C); workers' compensation (WC); and financial markets. Sapiens offers a full digital suite that facilitates an innovative, holistic and seamless digital experience for carriers, agents, customers and assorted insurance personnel, across multiple devices and technologies. Sapiens' offerings enable its customers to effectively manage their core business functions, including policy administration, claims and billing, and to offer support during an insurer's journey to becoming a digital insurer. Sapiens' portfolio also covers underwriting, illustration and electronic application.

Sapiens also supplies a complete reinsurance offering for providers and a decision management platform tailored to a variety of financial services providers, so that business users can quickly deploy business logic and comply with policies and regulations across their organizations.

Magic

Magic is a global provider of: (i) proprietary application development and business process integration platforms; (ii) selected packaged vertical software solutions; as well as (iii) a vendor of software services and IT outsourcing software services.

Magic technology is used by customers to develop, deploy and integrate on-premise, mobile and cloud-based business applications quickly and cost effectively. In addition, its technology enables enterprises to accelerate the process of delivering business solutions that meet current and future needs and allow customers to dramatically improve their business performance and return on investment. To complement its software products and to increase its traction with customers, Magic also offers a vast portfolio of professional services in the areas of infrastructure design and delivery, application development, technology consulting planning and implementation services, support services, cloud computing for deployment of highly available and massively-scalable applications and API's and supplemental outsourcing services.

In addition, Magic offers, through certain of its subsidiaries, a variety of proprietary comprehensive packaged software solutions for (i) revenue management and monetization solutions in mobile, wireline, broadband and mobile virtual network operator/enabler, or MVNO/E ("Leap"); (ii) enterprise management systems for both hubs and traditional air cargo ground handling operations from physical handling and cargo documentation through customs, seamless electronic data interchange, or EDI communications, dangerous goods, special handling, track and trace, security to billing ("Hermes"); (iii) enterprise human capital management, or HCM, solutions, to facilitate the collection, analysis and interpretation of quality data about people, their jobs and their performance, to enhance HCM decision making ("HR Pulse"); (iv) comprehensive systems for managing broadcast channels in the area of TV broadcast management through cloud-based on-demand service or on-premise solutions; and (vi) enterprise-wide and fully integrated medical platform ("Clicks"), specializing in the design and management of patient-file oriented software solutions for managed care and large-scale health care providers. This platform allows providers to securely access an individual's electronic health record at the point of care, and it organizes and proactively delivers information with potentially real time feedback to meet the specific needs of physicians, nurses, laboratory technicians, pharmacists, front- and back-office professionals and consumers.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS**U.S. dollars in thousands, except share and per share data**

NOTE 23-- OPERATING SEGMENTS (Cont.)

Magic solutions are used by customers to develop, deploy and integrate on-premise, mobile and cloud-based business applications quickly and cost effectively. In addition, its technology enables enterprises to accelerate the process of delivering business solutions that meet current and future needs and allow customers to dramatically improve their business performance and return on investment. Its software solutions include application platforms for developing and deploying specialized and high-end large-scale business applications (Magic xpa application platform, formerly branded uniPaaS and Appbuilder), an integration platform that allows the integration and interoperability of diverse solutions, applications and systems in a quick and efficient manner (Magic xpi business and process integration platform, formerly branded iBOLT) and a hybrid integration platform as a service (IPaaS), which enables customers to accelerate digital transformation on the cloud, on-premises or on both (Magic xpc). These solutions enable Magic customers to improve their business performance and return on investment by supporting the affordable and rapid delivery and integration of business applications, systems and databases.

Magic products and services are available through a global network of regional offices, independent software vendors, system integrators, distributors and value added resellers as well as original equipment manufacturers and consulting partners in approximately 50 countries.

Insync

InSync is a U.S based national supplier of employees to Vendor Management Systems (VMS) Workforce Management Program accounts. Insync specializes in providing professionals in the following areas; Accounting and Finance, Administrative, Customer Service, Clinical, Scientific and Healthcare, Engineering, Manufacturing and Operations, Human Resources, IT Technology, LI/MFG, and Marketing and Sales. InSync currently supports more than 30 VMS program customers with employees in over 40 states.

Michpal

Michpal, an Israeli registered company, is a developer of proprietary, on-premise payroll software solution for processing traditional payroll stubs to Israeli enterprises and payroll service providers. Michpal also developed several complementary modules such as attendance reporting, which are sold to its customers for additional fees. As of December 31, 2018, Michpal serves approximately 8,000 customers, most of which are long-term customers.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 23:- OPERATING SEGMENTS (Cont.)

TSG

TSG is a global high technology company engaged in high-end technical solutions for protecting the safety of national borders, improving data gathering mechanisms, and enhancing communications channels for military, homeland security and civilian organizations.

TSG operates primarily in the defense and homeland security arenas. The nature of military and homeland security actions in recent years, including low intensity conflicts and ongoing terrorist activities, as well as budgetary pressures to focus on leaner but more technically advanced forces, have caused a shift in the defense and homeland security priorities for many of TSG's major customers. As a result, TSG believes there is a continued demand in the areas of command, control, communications, computer and intelligence (C4I) systems, intelligence, surveillance and reconnaissance (ISR) systems, intelligence gathering systems, border and perimeter security systems, cyber-defense systems. There is also a continuing demand for cost effective logistic support and training and simulation services. TSG believes that its synergistic approach of finding solutions that combine elements of its various activities positions it to meet evolving customer requirements in many of these areas.

TSG tailors and adapts its technologies, integration skills, market knowledge and operationally-proven systems to each customer's individual requirements in both existing and new platforms. By upgrading existing platforms with advanced technologies, TSG provides customers with cost-effective solutions, and its customers are able to improve their technological and operational capabilities within limited budgets.

TSG markets its systems and products either as a prime contractor or as a subcontractor to various governments and defense and homeland security contractors worldwide. In Israel, TSG sells its defense, intelligence and homeland security systems and products mainly to the IMOD, which procures all equipment for the Israeli Defense Force (IDF).

b) Consolidated Goodwill in material partially owned subsidiaries:

	December 31,	
	2018	2017
Matrix and its subsidiaries	\$ 215,428	\$ 200,440
Sapiens and its subsidiaries	311,489	303,955
Magic and its subsidiaries	95,006	98,189
Michpal and its subsidiaries	18,932	14,688
	<u>\$ 640,855</u>	<u>\$ 617,272</u>

c) Reporting on operating segments:

The operating segments are identified on the basis of information that is reviewed by the chief operating decision maker ("CODM") to make decisions about resources to be allocated and assess its performance. The CODM have been identified as Formula's CEO. The CODM assess the performance of the Group based on each of the Group's directly held investees' operating income (or loss). Headquarters and finance expenses of Formula are allocated proportionally among the investees.

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 23-- OPERATING SEGMENTS (Cont.)

	Matrix	Sapiens	Magic	Other	Adjustments	Total
Year ended December 31, 2018:						
Revenues from external customers	878,188	289,707	282,205	109,041	(66,153)	1,492,988
Inter-segment revenues	2,869	-	2,170	80	(5,119)	-
Revenues	881,057	289,707	284,375	109,121	(71,272)	1,492,988
Unallocated corporate expenses	-	-	-	-	(2,113)	(2,113)
Depreciation and amortization	8,554	26,249	12,562	5,081	(3,712)	48,734
Operating income	61,264	16,799	31,698	4,210	(4,354)	109,617
Financial expenses, net						(8,290)
Group's share of profits of companies accounted for at equity, net						369
Taxes on income						(24,301)
Net income						77,395
Year ended December 31, 2017:						
Revenues from external customers	790,946	269,194	256,207	105,608	(66,816)	1,355,139
Inter-segment revenues	3,679	-	1,933	200	(5,812)	-
Revenues	794,625	269,194	258,140	105,808	(72,628)	1,355,139
Unallocated corporate expenses	-	-	-	-	(3,472)	(3,472)
Depreciation and amortization	6,855	21,969	13,611	4,935	(3,724)	43,646
Operating income (loss)	54,337	(5,053)	25,956	3,670	(6,104)	72,806
Financial expenses, net						(21,119)
Group's share of profits of companies accounted for at equity, net						1,124
Taxes on income						(13,371)
Net income						39,440
Year ended December 31, 2016:						
Revenues from external customers	660,012	216,190	198,096	72,585	(38,262)	1,108,621
Inter-segment revenues	2,578	-	3,550	-	(6,128)	-
Revenues	662,590	216,190	201,646	72,585	(44,390)	1,108,621
Unallocated corporate expenses	-	-	-	-	(2,713)	(2,713)
Depreciation and amortization	6,513	14,227	11,608	3,314	(3,292)	32,370
Operating income	48,776	20,636	21,087	2,198	(4,197)	88,500
Financial expenses, net						(11,586)
Group's share of profits of companies accounted for at equity, net						349
Taxes on income						(21,163)
Net income						56,100

NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

U.S. dollars in thousands, except share and per share data

NOTE 24:- SUBSEQUENT EVENTS

- a) On January 1, 2019 Matrix's board of directors approved, following the approval by Matrix compensation committee, the grant of 1,440,000 options which are exercisable into up to 1,440,000 ordinary shares of Matrix of NIS 1 par value each to 20 senior officers of Matrix or of corporations controlled by it. The exercise price of the options was NIS 41.70 at the date of their grant, and it is subject to adjustments, including upon the distribution of dividends. Half of the options will vest on January 1, 2021, quarter of the options will vest on January 1, 2022, and the rest vested on January 1, 2023. When the actual exercise will take place, shares will be allotted in the net exercise mechanism. Matrix will not get paid in cash.
- b) On February 6, 2019 Matrix concluded the acquisition of 80% of the share capital of Dana Engineering Ltd., an Israeli based company providing project management services in the field of national infrastructure in Israel, for total cash consideration of NIS 52,000 (approximately \$14,370). Matrix and the seller hold mutual options to purchase and sell (respectively) the remaining 20% interest in Dana Engineering which may be exercised following the second year anniversary of the acquisition.
- c) In March, 2019 Matrix concluded the acquisition of 100% of the share capital of MedaTech Ltd., an Israeli company and the leading business partner of Priority ERP with over 1,000 customers in a variety of verticals, for cash consideration of approximately NIS 85,000 approximately \$23,600.
- d) In March 2019 Magic concluded the acquisition of 100% of the share capital of Powwow Inc. a US based company and the creator of SmartUX™, a leading Low-Code development platform for mobilizing and modernizing enterprise apps which allow enterprises to rapidly transform any Windows or web application, workflow or data source into a full responsive and secure app that runs anywhere and on any device, with no disruption to the business.
- e) On March 26, 2019, the remaining outstanding Series B Convertible Debentures of the Company matured, and the Company repaid the holders of those debentures the entire remaining outstanding principal amount of NIS 44.5 million (\$11.4 million), together with interest of \$1.1 million, due under the debentures. That remaining principal amount had been reduced previously due to conversions of Series B Convertible Debentures that were effected during 2018 and 2019. Upon the Company's final repayment, all outstanding Series B Convertible Debentures were retired, and no such debentures are outstanding as of the date of this financial statements (see note 15(ii)).
- f) On March 31, 2019, Formula consummated a public offering in Israel of a new series of secured debentures - Series C Secured Debentures— in an aggregate NIS 300,000 par value amount, at a price of NIS 1,000 for each unit of NIS 1,000 principal amount. The aggregate gross proceeds from the public offering totaled NIS 298,500 (approximately \$82,186). The Series C Secured Debentures are secured by liens on the shares of Formula's subsidiaries, and are listed for trading only on the TASE (6,031,761 shares of Matrix; 2,411,474 shares of Magic and 2,957,590 shares of Sapiens). Each Series C Debenture unit bears interest at a fixed annual rate equal to 2.29%, which interest will be paid out on a semi-annual basis. The principal amount of the Series C Debentures will be payable by Formula in seven annual installments from December 1, 2020 through December 1, 2026, the first five of which will each constitute 11% of the principal, and the final two of which will each constitute 22.5% of the principal.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

**To the Board of Directors and Shareholders of
Magic Software Japan K. K.**

Opinion on the Financial Statements

We have audited the accompanying statements of financial position of Magic Software Japan K.K. (the "Company") as of December 31, 2017 and 2018, and the related statements of comprehensive income and cash flows for each of the three years in the period ended December 31, 2018. In our opinion, the financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2017 and 2018, and the related statements of comprehensive income and cash flows for each of the three years in the period ended December 31, 2018 in conformity with International Financial Reporting Standards.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), (PCAOB), the Company's internal control over financial reporting as of December 31, 2018, based on Section 404 of the Sarbanes-Oxley Act ("SOA") and our report dated February 6, 2019 expressed an unqualified opinion thereon.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

Tokyo, Japan
February 6, 2019

/s/ KDA Audit Corporation
KDA Audit Corporation

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

**To the Board of Directors and Shareholders of
Magic Software Japan K. K.**

Opinion on Internal Control over Financial Reporting

We have audited Magic Software Japan K.K.'s (the "Company") internal control over financial reporting as of December 31, 2018, based on Section 404 of the Sarbanes-Oxley Act ("SOA"). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on Section 404 of the Sarbanes-Oxley Act ("SON").

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), (PCAOB), the statements of financial position of the Company as of December 31, 2017 and 2018, and the related statements of comprehensive income and cash flows for each of the three years in the period ended December 31, 2018 and our report dated February 6, 2019 expressed unqualified opinion.

Basis for Opinion

the Company's management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Assessment of Internal Control over Financial Reporting. Our responsibility is to express an opinion on the entity's internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects.

Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control Over Financial Reporting

An entity's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. An entity's internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the entity; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the entity are being made only in accordance with authorizations of management and directors of the entity; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the entity's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Tokyo, Japan
February 6, 2019

/s/ KDA Audit Corporation
KDA Audit Corporation

List of Subsidiaries

Name of Subsidiary	Jurisdiction of Incorporation
InSync Staffing Services, Inc.	Delaware
Matrix IT Ltd.	Israel
Magic Software Enterprises Ltd.	Israel
Michpal Micro Computers (1983) Ltd.	Israel
Sapiens International Corporation N.V.	Cayman Islands
TSG Advanced IT Systems, Ltd	Israel

CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) UNDER
THE EXCHANGE ACT

I, Guy Bernstein, certify that:

1. I have reviewed this annual report on Form 20-F for the year ended December 31, 2018 of Formula Systems (1985) Ltd. (the "Registrant");
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The Registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the Registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Registrant's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Registrant's internal control over financial reporting; and
5. The Registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Registrant's auditors and the audit committee of the Registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Registrant's internal control over financial reporting.

Date: May 15, 2019

/s/ Guy Bernstein
Guy Bernstein
Chief Executive Officer

CERTIFICATION OF THE CHIEF FINANCIAL OFFICER
PURSUANT TO RULE 13a-14(a)/RULE 15d-14(a) UNDER
THE EXCHANGE ACT

I, Asaf Berenstein, certify that:

1. I have reviewed this annual report on Form 20-F for the year ended December 31, 2018 of Formula Systems (1985) Ltd. (the "Registrant");
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the Registrant as of, and for, the periods presented in this report;
4. The Registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the Registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the Registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the Registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the Registrant's internal control over financial reporting that occurred during the period covered by the annual report that has materially affected, or is reasonably likely to materially affect, the Registrant's internal control over financial reporting; and
5. The Registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the Registrant's auditors and the audit committee of the Registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the Registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the Registrant's internal control over financial reporting.

Date: May 15, 2019

/s/ Asaf Berenstein
Asaf Berenstein
Chief Financial Officer
(Principal Financial and Accounting Officer)

**CERTIFICATION OF THE CHIEF EXECUTIVE OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT
TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report of Formula Systems (1985) Ltd. (the "Company") on Form 20-F for the year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Guy Bernstein, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 15, 2019

/s/ Guy Bernstein
Guy Bernstein
Chief Executive Officer

**CERTIFICATION OF THE CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. SECTION 1350, AS ADOPTED PURSUANT
TO SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the annual report of Formula Systems (1985) Ltd. (the "Company") on Form 20-F for the year ended December 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Asaf Berenstein, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d), as applicable, of the Securities Exchange Act of 1934, and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: May 15, 2019

/s/ Asaf Berenstein
Asaf Berenstein
Chief Financial Officer
(Principal Financial and Accounting Officer)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-156686) of Formula Systems (1985) Ltd., of our reports dated May 15, 2019, with respect to the consolidated financial statements of Formula Systems (1985) Ltd. and the effectiveness of internal control over financial reporting of Formula Systems (1985) Ltd. included in this annual report on Form 20-F for the year ended December 31, 2018.

Tel- Aviv, Israel
May 15, 2019

/s/ Kost, Forer, Gabbay & Kasierer
KOST, FORER, GABBAY & KASIERER
A Member of Ernst & Young Global

CONSENT OF INDEPENDENT AUDITORS

OF

Magic Software Japan K.K

We consent to the incorporation by reference in the Registration Statement on Form S-8 (No. 333-156686) of Formula Systems (1985) Ltd., of our report dated February 6, 2019, with respect to the financial statements of Magic Software Japan K.K as of December 31, 2018, which report appears in the annual report on Form 20-F of Formula Systems (1985) Ltd. for the year ended December 31, 2018.

/s/ KDA Audit Corporation

KDA Audit Corporation

Registered Auditors

Tokyo, Japan
May 13, 2019