FORMULA SYSTEMS (1985) LTD
Form 20-F
May 15, 2018

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, 2017

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	Name of Each Exchange On Which Registered

American Depositary Shares, each representing one Ordinary Share, NIS 1 par value	**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, 2017, the registrant had 14,738,782 outstanding ordinary shares, NIS 1 par value, of which 174,724 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted 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 and post 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.

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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

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PART I

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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 3D. "Key Information—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.

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 filed any of these documents as an exhibit to this annual report or to any previous filling 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" 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, following our acquisition of Michpal on January 3, 2017 and InSync Staffing Solutions, Inc., or InSync and our affiliated company TSG Advanced IT Systems, Ltd., or TSG, following our acquisition of a 50% share interest in TSG on May 9, 2016.

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

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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 that comply with IFRS applicable as of January 1, 2015, in addition to as of December 31, 2015, 2016 and 2017. Our consolidated statements of profit or loss presented herein in IFRS cover the years ended December 31, 2016 and 2017, as well as the year ended December 31, 2015 (as adjusted from its prior preparation 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 provided financial information for the three fiscal years ended December 31, 2017 in this annual report as presented under IFRS. The selected financial information as of January 1, 2015 and as of and for the years ended December 31, 2015, 2016 and 2017 set forth below should be read in conjunction with, and is qualified in its entirety by reference to "Item 5. Operating and Financial Review and Prospects" and our audited consolidated financial statements and the notes thereto included in this annual report.

	Year ended December 31,		
	2015	2016	2017
	U.S. dollars in thousands (except per share data)		
Revenues	973,194	1,108,621	1,355,139
Cost of revenues	741,270	849,840	1,058,316
Gross profit	231,924	258,781	296,823
Research and development costs, net	15,123	22,328	39,853
Selling, marketing, general and administrative expenses	140,935	147,953	184,116
Operating income	75,866	88,500	73,854
Financial expenses	(14,955)	(17,594)	(29,916)
Financial income	5,422	6,008	8,749
Group’s share of earnings of companies accounted for at equity, net	5	349	1,124
Income before taxes on income	66,338	77,263	52,811
Taxes on income	15,984	21,163	13,371
Net income	50,354	56,100	39,440
Redeemable non-controlling interests	864	2,125	3,671
Net income attributable to non-controlling interests	29,661	31,530	25,417
Net income attributable to equity holders of the Company	19,829	22,445	10,352
Earnings per share (basic)	1.41	1.58	0.72
Earnings per share (diluted)	1.35	1.49	0.68
Number of shares used in computing earnings per share (basic)	14,071,210	14,213,719	14,436,763
Number of shares used in computing earnings per share (diluted)	14,665,365	15,525,261	14,731,603

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Statements of Financial Position:

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

Dividends

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

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

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

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

In June 2015, Formula declared a cash dividend to its shareholders, which was paid in August 2015, of $0.34 per share. 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 and 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 improving economic conditions in some of our markets, many companies are still cutting back expenditures or delaying plans to add additional personnel or systems. Any further 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.

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In the United States, the Trump Administration has called for substantial change to fiscal, tax and trade policies that may adversely affect our business. We cannot predict the impact, if any, of these changes to our business. However, it is possible that these changes could adversely affect our business.

If global economic and market conditions, or economic conditions in the United States, Europe or Asia or other key markets, remain uncertain or weaken further, 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. Furthermore, we may invest substantial resources in the development of solutions that do not achieve market acceptance or commercial success. We may also not have sufficient funds or other resources to make the required investments in product development. Even where we succeed in our sales efforts and obtain new orders from customers, the complexity involved in delivering certain of 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 reputation 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 about the use and benefits of our products and services, including the technical capabilities of our products and the potential cost savings achievable by organizations deploying our solutions or utilize our services. Customers typically undertake a significant evaluation process, which frequently involves not only our products, but also those of our competitors and can result in a lengthy sales cycle with little or no control over any delays encountered by us. 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, customer support and IT professional personnel is critical to our ability to develop and enhance our software solutions, support our customers and execute challenging design, implementation, and deployment projects, but an increase in such investment may reduce our profitability.

As providers of software solutions that rely upon technological advancements, we rely heavily on our research and development activities to remain competitive. We consequently highly depend 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, healthcare and defense industries. 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 software 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 investment in our personnel and product development might increase our costs of operations and thereby reduce our profitability, unless compensated through 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, if we seek to expand the marketing and offering of our products and services into new territories, it would require the retention of new, additional highly 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.

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;

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- 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, HMS and OfficeSoft. Matrix's competitors in the United States market include many companies who provide similar services to those offered by Matrix, as well as providers of offshore services. In some cases, Matrix competes with IBM, Accenture and the Big-4 accounting 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 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, 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.

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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 are 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 the years ended December 31, 2013, 2014 and 2015, which was presented in prior year’s annual report on Form 20-F, was derived from our annual audited consolidated financial statements which were prepared in accordance with U.S. GAAP. 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 presented in prior years is not directly comparable to our IFRS financial information 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, 34% and 22% of its revenues in the years ended December 31, 2016 and 2017, respectively. Five of Magic's customers accounted for, in the aggregate, 18% and 27% of its revenues in the years ended December 31, 2016 and 2017, respectively. One of these five customers' accounted for 98% of the revenues of a subsidiary of Magic and another customer accounted for 84% of the revenues of another Magic subsidiary.

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.

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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 certain relatively large 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, a variation in the timing of the initiation, progress or completion of projects or engagements can cause significant variations in operating results from quarter to quarter.

This is particularly the case on fixed-price contracts. Some of our solutions and services are sold as fixed-price projects with delivery requirements spanning more than one year. As certain of our projects can be highly complex, we may not be able to accurately estimate our actual costs of completing a fixed-price project. If our actual cost-to-completion of these projects exceeds significantly the estimated costs, we could experience a loss on the related contracts, which would have a material adverse effect on our results of operations, financial position and cash flow. In addition, 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 projects, 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 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 canceled due to the dispute. While Sapiens eventually entered into a settlement agreement with the customer which resulted in the termination of the software development project agreement, that caused a reduction in Sapiens’ and our revenues and operating profit relative to their and our prior estimates for 2017. Similar such disputes with other significant customers in the future, whether due to failure on our part 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.

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 liabilities 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 will be subject to the new European Union General Data Protection Regulation, or GDPR, which will create 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 will become 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.A. History and development of the company-- Capital Expenditures and Divestitures"

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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, and an additional $44.1 million of Series A Secured Debentures via a private placement.in Israel in January 2018. In March 2014, Magic Software consummated a public offering in which it received net proceeds of $54.7 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 8,297 as of December 31, 2012 to approximately 14,477 as of December 31, 2017, and may increase further as we aim to enhance 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.

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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 $545.7 million, $623.8 million and $781.3 million as of December 31, 2015, 2016 and 2017, 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, 2016 and 2017, 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 B Convertible Debentures and Sapiens' non-convertible debentures, issued in a public offering and private placement in Israel in September 2017, we have undertaken to maintain a number of conditions and limitations on the manner in which we can operate our business, including 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, including 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 the risk that we may not be able to maintain in the future the rating level assigned to the Notes. 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 provide 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 with certain of the shares of Formula's publicly held subsidiaries Matrix, Sapiens and Magic Software. 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 2016 and 2017, we received approximately 40% and 38% 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 operation 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;

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- 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 certain of our software solutions are complex, they may contain errors that cannot be detected at any point in their testing phase. While we continually test all our software solutions for errors or defects and work with customers our partners and end-users (who occasionally participate in our beta-testing of certain programs) 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 or in the applications developed with our technology. 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 or to develop or integrate their business applications, 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. Accordingly, the adverse consequences of, and expenses related to, failures, errors and defects could have a material adverse effect on our business, operating results, and financial condition.

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.

For example, in 2017, Sapiens received a letter from one of its significant customers, in which the customer alleged that Sapiens had materially breached a software development project agreement between them. 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 itself had materially breached the agreement. Work on the project was canceled 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 relative to its estimates for 2017 and (i) a decrease in Sapiens' revenues from this client compared to $26.5 million in 2016, and (ii) an increase of 4.1% in Sapiens cost of revenues as a percentage of its revenues.

As a result of the termination of the project with this significant customer, the acquisition of StoneRiver and the downsizing of Sapiens' non-insurance and financial services activities in Japan in 2017, Sapiens, executed a cost reduction and reorganization program in 2017. The plan was intended to significantly reduce Sapiens' cost base, restructure and realign its organization for better agility and productivity in utilization of its global workforce and improve its business performance, profitability and cash flow generation. Sapiens incurred $8.1 million of cost reduction and reorganization program expenses in 2017, primarily related to costs of employee terminations and reduction in leasing facilities globally.

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 these solutions requires training of the customer. If these 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, 34% and 22% of Sapiens' consolidated revenues in 2016 and 2017, respectively (or 7% and 4%, of our consolidated revenues, in each of the respective years). In addition, Magic Software's (together with its subsidiaries) five largest customers accounted for, in the aggregate, 18% and 27% of its revenues in 2016 and 2017, respectively (or 3% and 5%, of our consolidated revenues, in each of the respective years). One significant customer of TSG accounted for approximately 40% of its revenues in 2016 and 2017 (or 2% of our consolidated revenues, in each of the respective years). One significant customer of InSync accounted for approximately 21% and 28% of its revenues in 2016 and 2017 (or 1% and 1% 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.

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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, 2017, 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 $79.2 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.

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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 investees 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.

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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:

	NASDAQ		Tel Aviv Stock Exchange*			
	In USD$		In NIS		In USD$	
Year	High	Low	High	Low	High	Low
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
2013	26.64	16.22	94.99	57.89	26.96	15.51

* 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;

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- 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.

On August 3, 2017 Asseco Poland S.A., or Asseco, then holding 6,823,602 of our ordinary shares, representing 46.3% of our outstanding share capital, sold 2,356,605 of our ordinary shares, representing 16% of our outstanding share capital, to eleven (11) Israeli financial institutions, in privately negotiated sales transactions, for NIS124.14 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 to Mr. Bernstein, our Chief Executive Officer for the same price per share. As a result of those transactions, Asseco currently owns approximately 26.3% of our outstanding share capital.

On October 4, 2017, Asseco entered into a shareholders' agreement with our Chief Executive Officer, under which agreement Asseco has been granted an irrecoverable proxy to vote 1,971,973 of our ordinary shares owned by our Chief Executive Officer, thereby effectively giving Asseco voting power over an aggregate of 39.7% 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 60% and 62% of our consolidated revenues in 2016 and 2017, 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. 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 Cuts and Jobs Act of 2017, or the 2017 Tax Act, enacted in December 2017, introduced significant changes to the U.S. Internal Revenue Code.

At December 31, 2017, we have not completed our accounting for the tax effects of the enactment of the 2017 Tax Act; however, we have made reasonable estimates of the effects on the existing deferred tax balances for which provisional amounts have been recorded.

The 2017 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 the provisions of the 2017 Tax Act and significant estimates in calculations, and the preparation and analysis of information not previously relevant or regularly produced. The U.S. Treasury Department, the IRS, and other standard-setting bodies could interpret or issue guidance on how provisions of the 2017 Tax Act will be applied or otherwise administered that is different from our interpretation. As we complete our analysis of the 2017 Tax Act, collect and prepare necessary data, and interpret any additional guidance, we may make adjustments to provisional amounts that we have recorded that may impact our provision for income taxes in the period in which the adjustments are made.

The base erosion and profit shifting, or BEPS, project undertaken by the Organization for Economic Cooperation and Development, or OECD, may have adverse consequences to 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 (based on the change in the exchange rate reported by the Bank of Israel from the start to the conclusion of each year) amounted to 1.5% and 9.8% for the years ended December 31, 2016 and 2017, respectively. 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 no such inflation in either of the years ended December 31, 2016 or 2017, respectively, as the NIS was subject to deflation of 0.2% during 2016 and to inflation of 0.4% during 2017.

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."

Curacao law makes it more difficult for Sapiens to consummate a change of control transaction.

Sapiens' status as a Curacao company makes it more challenging (compared to Israel, various US states and other jurisdictions) to consummate the sale of Sapiens from which its shareholders could benefit economically via the payment of a premium on their shares relative to the then-current market price. Curacao law does not permit a reverse triangular merger, a commonly-utilized transaction structure for the acquisition of publicly traded companies such as Sapiens, where shareholders receive cash. Curacao law allows for the acquisition of a publicly traded company such as Sapiens for cash through a tender offer, provided that the offeror acquires at least 95% of the company's issued and outstanding share capital (which 95% threshold may be reduced under certain circumstances to 90% or 80% in case of a pre-wired asset sale), following which the offeror can purchase the remaining shares subject to court approval and possibly the exercise of certain dissenters' rights. Since Curacao law does not permit a cash merger and due to the challenges in obtaining such level of acceptance of the tender offer, a potential buyer might need to use different structures to acquire Sapiens, e.g. migrating the company to another jurisdiction that allows for a cash merger as a means to acquire publicly traded companies; however, such process may be very time-consuming and could therefore prevent such a transaction from occurring. An additional option under Curacao law is a sale of assets, which is likely to be generally less efficient to Sapiens' shareholders from a tax perspective. Each of the foregoing limitations or disadvantages of effecting an acquisition of Sapiens or its assets in which shareholders realize a premium could furthermore adversely impact the market price of Sapiens shares and therefore our shares in an ongoing manner. Sapiens' shareholders have approved the migration of Sapiens from Curacao to the Cayman Islands, which migration is still pending certain tax approvals. Please see Sapiens' proxy statement for its 2017 annual meeting of shareholders, appended as Exhibit 99.1 to its Report of Foreign Private Issuer on Form 6-K furnished to the SEC on October 26, 2017.

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.

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Sapiens was formed under the laws of Curaçao and the rights of shareholders under Curaçao law differ from those under U.S. law and Israeli law, therefore, you may have fewer protections as a shareholder.

Sapiens' corporate affairs are currently governed by its articles of association, the Civil Code of Curaçao and the civil law of Curaçao. The rights of shareholders to take legal action against Sapiens' directors, actions by minority shareholders and the fiduciary responsibilities of our directors under Curaçao law are to a large extent governed by the Civil Code of Curaçao, the civil law of Curaçao and applicable case law. The rights of shareholders and the fiduciary responsibilities of Sapiens' directors under Curaçao law are not as clearly established as they would be under statutes or judicial precedents in some jurisdictions in the U.S. and in Israel In particular, Curaçao has a less developed body of securities laws as compared to the U.S., and some states (such as Delaware) have more fully developed and judicially interpreted bodies of corporate law. In addition, Curaçao law does not generally distinguish between public and private companies, and some of the protections and safeguards (such as statutory pre-emption rights, except to the extent that they are expressly provided for in the Articles) that investors may expect to find in relation to a public company are not provided for under Curaçao law. As a result of all of the above, holders of Sapiens common shares, such as Formula, may have more difficulty in protecting their interests in the face of actions taken by Sapiens' management, directors or major shareholders than they would as shareholders of a U.S. or Israeli company.

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, 2017. 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, 2018, 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.

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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 60218, 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. As of 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 39.7% 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). 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 therefore 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 2015 fiscal year are described below. For additional information concerning our related financing activities since the start of our 2015 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, 2015, our percentage interest in Sapiens was 50.2%. 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 49.1% as of December 31, 2015, 48.9% as of December 31, 2016 and 48.1% as of December 31, 2017. 'Our interest in Sapiens' common shares is currently 48.1%. Pursuant to our acquisitions of Sapiens common shares, we invested an aggregate of $0.4 million in 2015 (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. As of January 1, 2015, we held 45.1% of Magic Software's outstanding share capital. We purchased additional shares in 2015 and 2016, which resulted in our current percentage interest increasing to 47.1%. Pursuant to our acquisitions of Magic Software's ordinary shares, we have invested an aggregate of $3.7 million and $2.7 million in 2015 and 2016, respectively. The sources of such funds have been our working capital and loans from financial institutions.

Changes in our percentage ownership of Matrix. As of January 1, 2015, our percentage interest in Matrix was 50.2%. 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 50.0% as of December 31, 2015 and 2016, and to 49.5% as of December 31, 2017. 'Our interest in Matrix's outstanding share capital is currently 49.2%. Pursuant to our acquisitions of Matrix shares, we invested an aggregate of $0.2 million in 2016 (there were no such purchases in 2015 or 2017). The sources of such funds have been our working capital and loans from financial institutions.

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. In the first quarter of 2017, Sapiens acquired StoneRiver, a US-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 $100 million in cash, subject to certain adjustments based on working capital, transaction expenses, unpaid debt and certain litigation matters. For further information, please see Note 4(ii)(e) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Adaptik. In the first quarter of 2018, Sapiens acquired Adaptik, a New Jersey company 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 $19.5 million in cash, subject to adjustment and about $3.5 million is subject to earn out-based specific criteria. For further information, please see Note 25(ii) 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)(f) 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. 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 also has the right to receive performance-based payments of up to $3.1 million relating to achievements of revenue and profitability goals over three years (2016, 2017, 2018), which are also subject to continued employment. As of December 31, 2017, the estimated fair value of the contingent payment was recorded as $422,000. For further information, please see Note 4(ii)(c) 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. 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. In addition, the seller of 4Sight may receive additional performance-based payments of up to $2.6 million relating to achievement of revenue and profitability goals over three years (2016, 2017, 2018), which are also subject to continued employment and therefore were not included as part of the purchase price. For further information, please see Note 4(ii)(d) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Ibexi. In May 2015, Sapiens acquired IBEXI Solutions Private Limited (“IBEXI”), an India-based provider of insurance solutions and services, which services 18 insurers in both the P&C and L&P markets throughout Southeast Asia. The total purchase price in this acquisition was approximately $4.9 million, of which $4.0 million was paid in cash by Sapiens at the closing, with the remaining $0.9 million subject to adjustment based on certain future performance criteria. As of December 31, 2017, the estimated fair value of the contingent payment was recorded as $251,000. For further information, please see Note 4(ii)(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Insseco. In August 2015, Sapiens acquired Insseco, a Poland-based software and services provider for the insurance market, from Asseco, the controlling shareholder of Formula, which helped Sapiens to establish a strong presence in the Polish insurance market. Sapiens paid approximately $9.1 million in cash for Insseco, subject to upwards adjustment based on its achieving future revenue goals during the five years following the acquisition. The estimated fair value of the remaining contingent payments was recorded as $424,000 as of December 31, 2017. For further information, please see Note 4(ii)(a) to our consolidated financial statements included in Item 18 of this annual report.

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Acquisitions by Matrix:

Acquisition of Alius Corp. In the first quarter of 2018*,* Matrix acquired 50.1% of the share capital of Alius in the United States for approximately $3 million in cash, plus an additional $3 million to be paid in two years. Matrix and the seller have a mutual option to purchase and sell (respectively) the remaining shares within two years following the closing date under the agreement. Alius provides consulting services in the area of regulatory and compliance in the US financial markets. For further information, please see Note 25(i) 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, focusing 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. Due to the put option, we recorded a redeemable non-controlling interest in Aviv in an amount of $1.5 million as of the acquisition date. In addition, the seller is 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. . As of December 31, 2017, the Aviv redeemable non-controlling interest was recorded at a value of $1.9 million. For further information, please see Note 4(iv)(h) 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 distributer 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 the remaining 45% interest in Stons. Due to the put option, we recorded a redeemable non-controlling interest in Stons in an amount of $2.2 million as of the acquisition date. In addition, the seller is 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. As of December 31, 2017, the Stons redeemable non-controlling interest was recorded at a value of $2.4 million. For further information, please see Note 4(iv)(g) 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. Due to the put option, we recorded a redeemable non-controlling interest in an amount of $3.9 million as of the acquisition date. As of December 31, 2017, the NIT redeemable non-controlling interest was recorded at a value of $3.9 million. For further information, please see Note 4(iv)(f) 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 date of 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. As of December 31, 2017, the value of our redeemable non-controlling interest in Programa was recorded as $2.3 million. For further information, please see Note 4(iv)(e) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Onno Apps by Matrix. In May 2015, Matrix completed the acquisition of all of the outstanding shares of Onno Apps Ltd., an Israeli based service provider specializing in mobile applications development services, for total consideration of NIS 4.6 million (approximately $1.2 million). In addition, the sellers may be eligible for future consideration, valued at $0.3 million as of the acquisition date, subject to obtaining accumulated operating income targets during three years commencing on January 1, 2016, not exceeding NIS 5.0 million (approximately $1.3 million). For further information, please see Note 4(iv)(d) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Hydus Solutions by Matrix. In April 2015, Xtivia Inc. (a wholly owned subsidiary of Matrix) completed the acquisition of all of the outstanding shares of Hydus Inc. in total consideration of $2.5 million. Hydus Inc. is a U.S based consulting firm specializing in software services in the field of Enterprise Information Management, or EIM. In addition, the sellers may be eligible for future consideration, valued at $1.7 million as of the acquisition dare, subject to achievement of accumulated operating income targets over the course of three years (not exceeding Hydus operating income). For further information, please see Note 4(iv)(c) to our consolidated financial statements included in Item 18 of this annual report.

Acquisitions by Magic:

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(iii)(e) 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. Due to the put option, Magic recorded a redeemable non-controlling interest in an amount of $14.0 million at the acquisition date. As of December 31, 2017, our redeemable non-controlling interest in Roshtov was recorded at a value of $14.7 million. For further information, please see Note 4(iii)(c) to our consolidated financial statements included in Item 18 of this annual report.

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Acquisition of Shavit. In October 2016, Magic Software acquired the entire share interests 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 a deferred payment and to an additional payment that is contingent upon the acquired business meeting certain operational targets in 2017. Magic Software's management believes the acquisition will broaden its professional service offering to its existing and new customers in Israel. In 2017, Magic Software paid the seller $0.9 million with respect to the deferred payment. The remaining obligation to the seller, allocated to deferred payment and contingent payment, was recorded as $2.4 million as of December 31, 2017. The amount was paid in full during the first quarter of 2018 as mutually agreed between the parties, leaving no other amounts due. For further information, please see Note 4(iii)(d) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Infinigy Solutions by Magic Software. In June 2015, Magic Software acquired a 70% interest in Infinigy Solutions LLC, a US-based services company focused on expanding the development and implementation of technical solutions throughout the telecommunications industry with offices over the US, providing nationwide coverage and support for wireless engineering, deployment services, surveying, environmental service and project management, for a total consideration of $6.5 million, of which $5.6 was paid upon closing and $0.9 million is contingent upon the acquired business meeting certain operational targets in 2016 and 2017. In July 2016, Magic Software paid the seller $0.5 million 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. In addition, Magic Software and the seller hold mutual call and put options, respectively, for the remaining 30% interest in the company. Due to the put option, Magic Software recorded a redeemable non-controlling interest in Infinigy in an amount of $3.6 million at the acquisition date. As of December 31, 2017, the value of the Infinigy redeemable non-controlling interest was recorded as $2.2 million. For further information, please see Note 4(iii)(b) to our consolidated financial statements included in Item 18 of this annual report.

Acquisition of Comblack IT by Magic Software. In April 2015 Magic Software acquired a 70% interest in Comblack IT Ltd., an Israeli-based company that specializes in software professional and outsource management services for mainframes and complex large-scale environments, for a total consideration of $1.8 million, of which $1.5 million was paid upon closing and $0.3 million was contingent upon the acquired business meeting certain operational targets in 2015. Magic Software and the seller hold mutual call and put options, respectively, for the remaining 30% interest in the company. Due to the put option, we recorded a redeemable non-controlling interest in an amount of $1.0 million as of the acquisition date. In March 2016, Magic Software paid the seller the remaining contingent payments for meeting the operational targets for 2015. As of December 31, 2017, the Comblack redeemable non-controlling interest was recorded at a value of $7.4 million. For further information, please see Note 4(iii)(a) to our consolidated financial statements included in Item 18 of this annual report.

During the year ended December 31, 2016, Formula and its subsidiaries and affiliates completed several additional acquisitions for a total cash consideration of approximately $8.9 million. These acquisitions generally enhance our technologies, product and services offerings. Pro forma results of operations for these acquisitions have not been presented because they are not material to the 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.

During the year ended December 31, 2015, Formula and its subsidiaries and affiliates completed additional acquisitions for total cash consideration of approximately $1.9 million and increased their equity interest in two existing subsidiaries and one affiliate for total consideration of $2.3 million. These acquisitions generally enhance our technologies, product and services offerings. Pro forma results of operations for these acquisitions have not been presented because they are not material to the consolidated results of operations, either individually or in the aggregate.

B. Business Overview

General

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 training 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.

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. The majority 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, 2017, we held 90% of the shares of InSync, a 49.5% interest in Matrix, a 48.1% interest in Sapiens, a 47.1% 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 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, software testing and QA, depending on specific needs of the customer and depending on the subject expertise necessary professional all 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 8,600 software, hardware, integration and training personnel, which provide advanced IT services to hundreds of customers in the Israeli and the US 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.

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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 2017, under this line of business, Matrix recorded revenues of approximately $489.3 million, compared to $402.6 million in 2016, an increase of approximately 22%. Operating income was approximately $26.7 million in 2017, compared to $20.2 million in 2016, an increase of approximately 32%. In 2017, activity in software solutions and value-added services in Israel accounted for approximately 61% of Matrix's revenues and approximately 49% 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 2017, under this line of business, Matrix recorded revenues of approximately $91.0 million, compared to $74.6 million in 2016, an increase of approximately 22%. Operating income in 2017 was approximately $11.5 million, compared to $11.9 million in 2016, a decrease of approximately 3%. In 2017, activity in the U.S accounted for approximately 11% of Matrix's revenues and for approximately 21% 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 2017, under this line of business, Matrix recorded revenues of approximately \$133.6 million, compared to \$109.0 million in 2016, an increase of approximately 23%. Operating income in 2017 was approximately \$6.0 million, compared to \$4.7 million in 2016, an increase of approximately 26%. In 2017, activity in computer infrastructure and integration solutions accounted for approximately 17% of Matrix's revenues and for approximately 11% 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 2017, under this line of business, Matrix recorded revenues of approximately \$35.4 million, compared to \$35.2 million in 2016, an increase of approximately 1%. Operating income in 2017 was approximately \$5.7 million, compared to \$5.1 million in 2016, an increase of approximately 12%. In 2017, activity in software product marketing and support accounted for about 5% of Matrix's revenues and for approximately 10% of its operating income.

Training and integration: Matrix's activities in this area consist of operating a network of training centers which provide advances 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 2017, under this line of business, Matrix recorded revenues of approximately \$45.3 million, compared to \$41.1 million in 2016, an increase of approximately 10%. Operating income in 2017 was approximately \$4.8 million, compared to \$3.7 million in 2016, an increase of approximately 30%. In 2017, activity in training and integration accounted for approximately 6% of Matrix's revenues and for approximately 9% 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, 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 about 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.

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. 37% of Matrix's customers operate in the financial, banking and insurance sector, 22% in the industry, retail and hi-tech sector, 13% in the government sector, 12% in the defense sector, and the remaining 16% in other business sectors.

Sapiens

Sapiens International Corporation N.V. is a leading global provider of software solutions for the insurance industry, with a growing presence in the financial services sector. Sapiens' extensive expertise in the insurance industry is reflected in its innovative software suites, solutions and services for providers of Property & Casualty/General Insurance, or P&C, and Life, Pension & Annuity, or L&A, insurance. Sapiens' offerings enable its customers to effectively manage their core business functions, including policy administration, claims management and billing, and support them during their journey to becoming a digital insurer. Sapiens also supplies a complete offering for reinsurance providers and a decision management platform that enables its customers to quickly deploy business logic and comply with policies and regulations across their organizations. Sapiens' solutions, which possess modern, modular architecture and are digital-ready, empower customers to respond to evolving market needs and regulatory changes, while improving the efficiency of their core operations. These enhancements increase revenues and reduce costs.

2017 was a year of organizational growth for Sapiens, In February 2017, Sapiens announced its acquisition of StoneRiver. StoneRiver's product portfolio is comprised of claims, billing, rating, underwriting, illustrations, reinsurance and finance & compliance solutions for all major insurance business lines, across both P&C and L&A. StoneRiver's rich set of solutions complements Sapiens' existing offerings and has helped Sapiens accelerate its growth in the U.S. market specifically, and globally as well.

In late December 2017/early January 2018, 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. Privately-held KnowledgePrice employed about 50 digital insurance technology experts and is a provider of services to leading insurance providers in the UK and Europe. KnowledgePrice serves as a center for excellence for digital engagement services. Its experts joined Sapiens' Digital Division, which focuses on digital and business intelligence (BI) services and solutions, including portal and digital distribution offerings to customers worldwide. The expanded Digital Division will create innovative offerings and provide full support during customers' digital journeys.

In early 2018, Sapiens announced the acquisition of Adaptik, a North American P&C solution provider. This acquisition is expected to enable Sapiens to provide North American P&C carriers with an enhanced platform, which will improve Sapiens' competitive position and enable it to increase its market share in the North American insurance market. Going forward, Sapiens will offer an innovative P&C digital insurance platform. This platform will be formed by combining three powerful core components: Adaptik Policy, Adaptik Billing and StoneRiver Stream® Claims, accompanied by Sapiens' existing solutions for data and analytics, digital engagement and distribution, and cloud operation.

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Sapiens operates in a large market undergoing significant transformation. According to “IT Spending in Insurance: a Global Perspective, 2017” (a research report by Celent, a research and consulting firm, published on April 5, 2017), global IT spending by insurance companies is expected to grow from $184.8 billion in 2017 to $193.7 billion in 2018, and $202 billion in 2019. IT spending on external software and IT services, which was predicted to total approximately $83 billion in 2017, is expected to increase to $89 billion by 2018, reflecting a 7.6% growth rate. It is thought that IT spending in the life vertical will grow from $101.5 billion in 2017, to $106.1 billion in 2018, reflecting a 4.6% growth rate. IT spending in the property and casualty vertical is expected to grow from $83.8 billion in 2017 to $87.6 billion in 2018, reflecting a 5.1% growth rate.

We believe that Sapiens’ current total addressable market for core insurance software solutions is approximately $40 billion, which we expect to grow as a result of insurance carriers’ and financial institutions’ need to spend on modern software solutions from external providers to address the operational challenges presented by the inefficiency of their legacy core systems. Legacy systems possess 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 are translated into 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, accordingly, 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 are operating in a dynamic and changing regulatory environment. Often their legacy systems simply do not support new regulatory requirements and put carriers at risk of non-compliance. We believe these challenges will accelerate the shift from spending on legacy systems to new vendor software solutions, and the shift from reliance on in-house development to external vendors.

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.

Sapiens’ competitors in the insurance software solutions market differ based on size, geography and lines of business. Some of Sapiens’ competitors offer a full suite, while others offer only 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, using IT outsourcing (ITO) or business process outsourcing (BPO).

The insurance software solutions market is highly competitive and demanding. Maintaining a leading position is challenging, because it requires:

- Development of new core insurance solutions, which necessitates a heavy R&D investment and an in-depth knowledge of complex insurance environments.
- Technology innovation, to attract new customers, with rapid, technology-driven changes in the insurance business model and new propositions coming.
- A global presence and the ability to support global insurance operations.
- Ability to manage multiple partnerships, due to the changing landscape of the insurance ecosystem.
- Satisfaction of regulatory requirements, which can be burdensome and require specific IT solutions.
- Continued support and development of the solutions entails a critical mass of customers that support an ongoing R&D investment.
- Know-how of insurance system requirements and an ability to bridge between new systems and legacy technologies.
- Mission-critical operation that requires experience, domain expertise and proven delivery capabilities to ensure success**.**

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.

We believe Sapiens is well-positioned to leverage its modern solutions, customer base and global presence to compete in this market and meet its challenges. In addition, Sapiens accumulated experience and expert teams allow it to provide a comprehensive response to the IT challenges of this market.

Sapiens' offering is comprised primarily of (1) **Sapiens' Software Solutions –** software solutions for the insurance industry with a growing presence in the financial services sector and (2) **Sapiens' Global Services** - including project delivery and implementation of its solutions.

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

- **Digital** – revealing their history and anticipating their future needs, while facilitating easy engagement across preferred interaction channels and multiple devices.
- **Data-driven** – based on set of data analysis tools, from analytics to predictive, to provide a data-driven operation.

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Highly automated – by using various technologies, from decision to robotics, Sapiens improves efficiency and offers agile customer engagement.
Comprehensive and function-rich – supporting insurance standards, regulations and processes, by providing field-proven functionality and best practices.
Customizable – easily matches Sapiens' customers' specific business requirements. Sapiens' flexible architecture and configurable structure allows quick functionality augmentation that permits its platform to be used across different markets, unique business requirements and regulatory regimes, utilizing its knowledge and extensive insurance best practices.
Open architecture and insurtech ecosystem – provides 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 – allowing 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 of the insurance markets served by Sapiens.
Improvement of operational efficiency and reduction of risk, by providing full insurance process automation, with configurable workflows, audit and control, streamlined insurance practices and simple integration and maintenance.
Reduction of overhead for IT maintenance through 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, through event-driven architecture, 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 – with the flexibility to also provide an on-premises deployment approach.
Support of digitalization – digitalization holds massive potential for insurers and financial services institutions, if they 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.

Many large organizations, particularly in the financial services market, must comply with complex regulations. They operate in highly competitive markets that require quick responses. Business logic drives most of the financial services transactions and is the backbone of an organization's policies and strategies, and its ability to successfully operate. To operate efficiently, business owners must assume ownership of the business logic and possess the ability to define and modify it; standardize it; and reuse it across the organization. Today, business logic is defined by business owners and compliance officers, but IT departments translate the requirements into code. This process raises several key challenges: the result does not always accurately reflect the business requirements; the new requirements might conflict with, or override, previous requirements; and the entire process is not fully audited. These gaps often create an inefficient and risk-exposed organization.

Sapiens Solution Offerings

Sapiens is a leading global provider of software solutions for the insurance industry. By enabling Sapiens' insurance and financial services customers to digitize their business and be more agile in the face of changing business environments, Sapiens helps 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' software portfolio is comprised of:

Life, Pension and Annuities Platforms/Solutions – comprehensive software platform and solutions for the management of a diversified range of products for life, pension and annuities. Sapiens' portfolio includes Sapiens ALIS, LifeSuite, Life Portraits, LifeApply, Sapiens INSIGHT and Sapiens Closed Books.

Property and Casualty/General Insurance Platforms/Solutions – comprehensive software platforms and solutions supporting a broad range of business lines including personal, commercial and specialty lines, and workers' compensation. Sapiens' portfolio includes Sapiens IDIT, Adaptik Policy, Adaptik Billing, Stream Claim, Sapiens Stingray, PowerSuite and CompSuite.

Digital Engagement – a digital insurance suite that provides an enablement platform that digitalizes insurance carriers' business and helps them transform. It is comprised of a set of integrative offerings, including: advanced analytics, a customer-centric portal for consumers and agents, an API layer for seamless integration with the insurtech ecosystem, accompanied by a strong cloud proposition.

Sapiens also offers consulting – process analysis, business process automation, project management, performance optimization, etc. – and services, such as information system development and various implementation methodologies. In sum, Sapiens provides an end-to-end, holistic and seamless digital experience for agents, customers and assorted insurance personnel.

Reinsurance – complete reinsurance software solutions for full financial control and auditing support. Sapiens portfolio includes Sapiens Reinsurance, Freedom Reinsurance System (FRS) and Universal Reinsurance System (URS®).

Financial and Compliance – financial and compliance solutions comprised of both annual statement and insurance accounting software. This software includes eFreedom® Annual Statement, PRO Financial General Ledger and Accounts Payable, PTE Financial applications, Insurance Financial reporting and Power2Play.

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Decision Management – Sapiens offers Sapiens DECISION, an enterprise-scale platform that enables institutions to centrally author, store and manage all organizational business logic. Organizations of all types – including banks, mortgage institutions and insurers – use it to track, verify and ensure that every decision is based on the most up-to-date rules and policies

Technology-Based Solutions – tailor-made solutions (unrelated to the insurance or financial services market) based on Sapiens' eMerge platform, which provides end-to-end, modular business solutions, ensuring rapid time to market.

Sapiens Life, Pension and Annuity Solutions

Sapiens ALIS for Life, Pension and Annuities: Sapiens ALIS is a comprehensive, single software platform for individual, employee and group business. It provides comprehensive support for the complete policy lifecycle of all life insurance products, from quotation and illustrations; to underwriting, billing and servicing; through claims management and exit processing.

Sapiens ALIS supports a wide range of insurance product lines across multiple territories, including:

- Individual and group life, investment and savings
- Individual and group protection, and risk products
- Individual and group pension
- Annuity products
- Hybrid products

Sapiens ALIS is a modular system that includes all the functional components necessary for insurers to manage their business. Insurance carriers can manage their entire core business on a single platform and integrate Sapiens ALIS with other systems for the completion of a specific activity, or domain.

Sapiens ALIS integrates all of the following functions into one solution:

- Sales, quotation and illustration
- New business
- Underwriting
- Policy servicing
- Billing, collection and payment management
- Claims processing

Agency and commission
CRM and customer management
Workflow and diary
Compliance and calculation engine
Insurance product manufacturing

Group insurance arrangements can be complex for insurers, with multiple and complex enrollment and eligibility rules, coverages, hierarchies and rules. Sapiens ALIS simplifies the complex management processes via an intuitive user experience, made simple with graphical, user-friendly, intuitive, business tools. This will create and empower self-sufficient business users to manage their business.

On top of the functional modules, Sapiens ALIS provides a set of digital capabilities to its customers, including an advanced analytics solution, a consumer and agent portal, personalized video capabilities and a customer engagement platform. These capabilities increase customer touch-points and generate actionable insights. Sapiens has partnered with Microsoft Azure to offer its Sapiens ALIS policy administration system and accompanying services over private and public clouds.

LifeSuite

LifeSuite is a web-based solution from StoneRiver, a Sapiens company, for automated underwriting and new business case management. LifeSuite streamlines underwriting case flow, speeding up and improving the entire new business process for carriers and their distribution channels. The solution delivers an impressive user impressive. While it provides the most efficient and consistent solution, carrier staff can customize system features and underwriting rules to fit business needs and make informed underwriting decisions.

Life Portraits

Life Portraits is an offering from StoneRiver, a Sapiens company. It is a point-of-sale solution, providing access anywhere: from the field, home or office in an electronic environment. The life insurance illustrations software is one of the most widely used new business insurance illustrations systems for life, health and annuities (including term, whole life, universal life, variable and equity-indexed annuities) that can strengthen relationships and speed your sales process. Life Portraits' Home Office Maintenance tools enable the home office to edit plans for faster changes.

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LifeApply

LifeApply is web-based insurance application software from StoneRiver, a Sapiens company. It provides carriers with the choice of a standalone e-app system, or a more comprehensive solution that seamlessly integrates with the Life Portraits Illustrations and LifeSuite Automated Underwriting Systems. LifeApply combines the best features and functionality of previous offerings with a completely redesigned look-and-feel.

Sapiens Closed Books

Sapiens Closed Books is a solution for life and pension insurance companies that enables them to efficiently and more effectively administer policies and claims relating to their legacy portfolio and closed books business (products that are no longer open to new business, but must still be administered).

An industry leading and proven system, Sapiens Closed Books was designed to deliver solutions to legacy portfolio challenges, while significantly cutting the costs that are commonly associated with legacy platforms. Sapiens Closed Books provides a full, end-to-end legacy portfolio-focused system that is capable of dealing with missing data, old legislation and a wide range of product types.

The Sapiens Closed Books model ensures that benefits are realized in a controlled and low risk manner, via best practices and proven industry experience.

Sapiens Property & Casualty/General Insurance Solutions

Sapiens IDIT

Sapiens IDIT is a component-based software solution, addressing the specific needs of general insurance carriers for traditional insurance, direct insurance, bank assurance and brokers markets, primarily in EMEA and Asia-Pacific.

It supports a broad range of general, personal and commercial lines of business, including:

Personal lines – motor, personal property and homeowner, yacht, travel, medical insurance, liability, professional indemnity, etc.
Commercial lines – fleet insurance, marine, cargo, engineering, real estate and commercial building, small and large commercial risks, etc.
Specialty lines – agriculture, credit insurance, art insurance, etc.

Sapiens IDIT integrates multiple front office and back office processes, including insurance product design, the quote and buy process, policy administration, underwriting, call center, and remote users and partners, backed by fully secured internet-based capabilities.

By providing a full set of components, Sapiens IDIT supports insurance carriers' core operations lifecycle – from inception to renewal, and claims. This includes:

Policy administration
Claims management
Billing and collection

Sapiens IDIT includes modular software components that can be customized to match specific insurance business requirements, while providing pre-configured functionality, including:

Product factory
Policy administration
Billing and collection
Claims management
Customer Relationship Management (CRM)
Intermediary management
Workflow management
Technical accounting
Document management

On top of the functional modules, Sapiens IDIT provides a set of digital solutions and services to its customers, including an advanced analytics solution, a consumer and agent portal, personalized video capabilities and cloud offerings and services. These capabilities accelerate and automate responses, and reduce costs.

Sapiens North American P&C Platform

The recent acquisition of Adaptik will enable Sapiens to offer a truly modern, comprehensive property and casualty digital insurance platform to the North American region. This platform will be formed by combining three powerful core components: Adaptik Policy, Adaptik Billing and Stream® Claims, accompanied by Sapiens' existing solutions for data and analytics, digital engagement and distribution, and cloud operation.

- **Adaptik Policy** is used by agents, underwriters and customers to quote, issue and administer policies, including integration with third-party systems.
- Adaptik Billing is an enterprise billing platform from the leaders in configurable, scalable P&C insurance software solutions.
- **Stream Claims** streamlines end-to-end claims processing for all personal and commercial lines, and prepares you to adapt to new business requirements with the underlying platform.

Sapiens Stingray

Sapiens Stingray is a modular browser-based, property and casualty policy administration solution for Policy (quoting, rating, issuance), Billing, Claims and Reinsurance administration. Sapiens Stingray includes complete customer and agent portals as well as an imaging system. Additionally, Stingray has statistical bureau reporting, DMV, Credit Card, General Ledger, Comparative Raters, CLUE, Business Intelligence, reporting and many other third party insurance related interfaces.

PowerSuite and CompSuite

PowerSuite and CompSuite handle comprehensive workers' compensation policy administration and claims needs. CompSuite can deliver a turnkey solution in just 120 days. PowerSuite helps upper market carriers, administrators and state funds improve customer satisfaction, optimize operational efficiency and increase profitability.

Sapiens Reinsurance

Sapiens Reinsurance is a comprehensive business and accounting solution designed to support the entire range of reinsurance contracts and activities, both ceded and assumed, for all lines of business. This software product provides both insurers and reinsurers superior handling of all reinsurance activities and in-depth accounting functionality on a single platform. By incorporating fully automated functions adapted conveniently for its customers' business procedures, Sapiens Reinsurance provides flexible and full financial control of its customers' reinsurance processes, including full support for all auditing requirements and statutory compliance.

Sapiens Reinsurance offers end-to-end processing, including:

- Set-up and definition of the reinsurance program and comprehensive transaction processing for both cession and assumed contracts
- Automated production of all periodic statements, billings, bordereaux and accounts for all parties – reinsurers, brokers and ceding companies
- All-inclusive financial accounting module for current accounts management, P&L and balance sheet figures, and comprehensive support for general ledger accounts
- Complete audit trail and tracking capability of all activities, transactions and business processes

Freedom Reinsurance System (FRS)

Freedom Reinsurance System (FRS) is designed to meet the ceded reinsurance processing needs of property and casualty/general insurance, from calculating premium and claim cessions, to producing the data required for Schedule F.

Universal Reinsurance System (URS)

Universal Reinsurance System (URS) supports both ceded and assumed property and casualty reinsurance processing, and produces the data required for Schedule F. The ease of configuration, as well as the price point, makes URS a very attractive offering to the insurance market.

Sapiens Digital Suite

Sapiens INTELLIGENCE

Sapiens INTELLIGENCE is a modular, highly innovative business intelligence solution specifically designed for the insurance market. Based on the advanced technology of SAP's analytics platform, Sapiens INTELLIGENCE is an important component of the industry-leading Sapiens' portfolio and is comprised of two integral elements: SmartStore and InfoMaster.

SmartStore is a centralized data hub for all insurance reporting and analytics. It gathers data from Sapiens' operational repository and intelligently transforms it into an insurance-domain set of business logical models, specifically designed for complex and in-depth analytics.

InfoMaster is Sapiens' set of analytical applications, offering a wide range of data visualization and analysis capabilities through reporting, dashboards and data discovery. Incorporating Sapiens' best practices and three decades of leading experience, Sapiens InfoMaster helps insurers achieve greater efficiency and begin reaping the benefits of analytics immediately.

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Sapiens PORTAL

The Sapiens PORTAL is pre-integrated with Sapiens core solutions. In addition to enjoying the myriad benefits provided by Sapiens' core, insurers can benefit from a portal that will transform their online sales, customer and agent experience. Insurers can choose a flexible deployment option that best fits their needs from the following approaches:

- Portal deployed over Sapiens' core policy admin. system
- Portal as a standalone digital solution, for a rapid launch of digitally-enabled business
- Portal over multiple systems, serving as a single point of engagement with the agents and customers

The Sapiens PORTAL was specifically designed to address insurers' needs, guided by Sapiens' three decades of industry experience. Two key segments are addressed by the Sapiens PORTAL:

The PORTAL for Consumers is a direct-to-consumer digital application providing a customer-centric view that enables customers to buy policies, view the status of their policies and accounts, issue claims and conduct many other transactions that save insurers time and reduce costs. Insurers can leverage their investment by offering customers a unique, real-time customer experience tailored to today's digital natives.

The PORTAL for Agents empowers the agent 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. They can also obtain a holistic view of their business performance overall and benefit from full access to all their remunerations, payments, commission transactions and statements. Equipping agents with self-service tools that make their lives easier and help them better serve their customers will increase agent efficiency and satisfaction.

Sapiens' acquisition of KnowledgePrice meant 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.

Sapiens Business Decision Management Solutions

Sapiens DECISION

Sapiens DECISION is a business decision management solution that consistently enforces business logic across all enterprise applications. Organizations use it to track, verify and ensure that every decision is based on the most up-to-date rules and policies. The solution is powered by The Decision Model®, a widely adopted decision management methodology, for which Sapiens owns a number of patents.

Organizations are undergoing a paradigm shift in the way they approach change, by replacing conventional policy and process management with a growing discipline called "decision management." Decision management bridges 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. This ensures that the business logic is complete, internally consistent and accurate, and does not replicate existing logic.

Sapiens DECISION allows the reusability and governance of business logic across all business divisions and software applications, using any rules engine or business process management system, and integrating seamlessly with the BRM or BPM system that the organization has in place.

Some of the key benefits for organizations that use Sapiens DECISION are:

Reduced risk, by assessing the impact of any change (competitive, strategy, regulatory, etc.) and allowing users to simply and quickly design new and sustainable models to meet evolving business requirements.
Limited costs and complexity, by centralizing the development and dissemination of institutional business logic, which improves efficiency.
Improved visibility and true governance, by putting business users in full control of institutional business logic and enabling them to trace every policy and rule back to its motivation and documentation.
Establishment of a "single point of truth," by providing business and IT users a centralized business logic repository.

Sapiens is currently focusing on the development and marketing of Sapiens DECISION in the financial services market in North America and Western Europe, and 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 intends to develop and market Sapiens DECISION for the insurance industry and leverage Sapiens' industry knowledge and close relationships with Sapiens' existing customers and partners.

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 Sapiens' customers in an efficient, cost effective manner with Sapiens eMerge.

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Sapiens' Global Services

As noted previously, 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 and data management consolidation, data migration
UAT testing
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 30 years of field-proven project delivery of core system solutions, based on best practices and accumulated experience.
Customer Integration: Sapiens helps its 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 available worldwide to provide professional services.

Sapiens' implementation teams assist customers in building implementation plans, integrating Sapiens 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 us develop strategic relationships with Sapiens' customers, enhances information exchange and deepens Sapiens' understanding of the needs of companies within the industry.

Through Sapiens' service teams, Sapiens provides a wide scope of services and consultancy around Sapiens' core solutions, both in the initial project implementation stage, as well as ongoing additional services. Many of Sapiens' customers also use Sapiens' 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 Sapiens' 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 us. 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 Sapiens' offices and customer sites.

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

Sales and Marketing

Sapiens' main sales channel is direct sales, with a small portion of partner sales. Sapiens' sales team is dispersed across Sapiens' 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.

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

In 2017, Sapiens continued to significantly invest in Sapiens' target regions – North America, Europe, Asia Pacific and South Africa – and its sales, presales, domain experts and marketing personnel. Sapiens anticipates that its sales team will leverage their proximity to customers and prospective clients to drive more business, and offer Sapiens' services across Sapiens' 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. Sapiens believes that a high level of post-contract customer support is important to Sapiens' continued success.

Sapiens attends major industry trade shows to improve its visibility and its market recognition. Additionally, it hosts client conferences– such as its annual Sapiens Client Conference, which took place in Gouvieux, France in October 2015, in North Atlanta, U.S. in September 2016 and in Lisbon, Portugal in October 2017. In addition, StoneRiver hosts an annual customer summit in the U.S., which took place in Amelia Island, FL in 2015 and Tucson, AZ in 2016– that are intended to strengthen Sapiens' relationships with its existing customer base. Sapiens continues investing in its web presence and digital marketing activities to generate leads and enhance its brand recognition. Sapiens maintains a blog channel ("Sapiens Spotlight"). It 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 Sapiens' offerings and provide its customers with comprehensive and innovative solutions that address the entire breadth of their business needs.

Geographically, Sapiens derived 40.7%, 44.9%, 6.7% and 7.7% of its revenue from North America, Europe, Asia-Pacific and South Africa regions, respectively, in the year ended December 31, 2017, and 34.4%, 49.6%, 14.0%, and 2.0%, from those regions, respectively, in the year ended December 31, 2016.

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.

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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.

Development communities are facing high complexity, cost and extended pay-back periods in order to deliver cloud, RIAs, mobile and SaaS applications. 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.

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;

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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 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. 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 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 March 2016, Magic Software released Magic xpa version 3.1 of its Magic xpa Application Platform, incorporating feedback from the field to bring Magic Software's customers additional value in terms of simplifying app modernization, accelerating enterprise mobile app development and maximizing end user adoption. This release included end user customization capabilities, an enhanced UI, and a new Upgrade Manager.

In November 2016, Magic Software released Magic xpa version 3.2. The Magic xpa 3.2 release included new Windows 10 mobile client and iOS 10 support for expanded mobile options; UX and productivity improvements; a Web Services Gateway providing support for n-tiered application architecture; a new Compare and Merge Tool; improvements to the Upgrade Manager utility and additional backward compatibility features.

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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 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 PlatformsDuring 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.”

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 2015, Magic xpi was awarded the Integrate 2015 award for Top Innovator for Integration Middleware.

In June 2016, Magic Software released version 4.5 of its Magic xpi Integration Platform, designed to make digital transformation and IoT projects easier. Magic xpi 4.5 included a fresh Microsoft® Visual Studio®-based UI with enhanced productivity features, expanded out-of-the-box connectivity including an MQTT adapter, and a Connector Builder that lets users quickly build their own full-featured reusable connectors. Magic xpi 4.5 had expanded connectivity capabilities and robust in-memory computing architecture to help the execution of business-critical digital transformation and IOT projects.

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 December March 20172018, 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.

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.

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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

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.

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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 1,400 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, cloud computing, 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, Infinigy 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 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, 2017, Magic Software had approximately 117 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.

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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, 2017, 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 (“ERP”) applications with a certified connector

In January 2018, Michpal released its new product and a new service line – “Michpal Pension” and “Michpal PensionPlus”. 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 with no more than 20 employees.

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.

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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,	
	2016	2017
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

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.

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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 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, HMS and OfficeSoft. Matrix's competitors in the United States market include many companies who provide similar services to those of Matrix, as well as providers of offshore services. In some cases, Matrix competes with IBM, Accenture and the Big-4 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 and Sela.

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 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 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 through the following key factors:

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

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, Salesforce and Pegasystems. With respect to Magic xpi, Magic Software competes in the integration platform market. Among its current competitors are IBM, Informatica, TIBCO, 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.

With respect to Michpal, the market in which it operates is very fragmented and among its current competitors in the Israeli market in which it operates are mainly 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 in the Israeli market, which accounts for approximately 60% of our annual revenues:

	1st quarter	2nd quarter	3rd quarter	4th quarter
2017	585.0	532.5	571.5	567.0
2018	576	559.5	539.5	585
2017	26 %	24 %	25 %	25 %
2018	25 %	25 %	24 %	26 %

In 2017, the second and, to a lesser extent, the fourth quarters were negatively impacted by the reduced billable hours as a result of the Jewish holiday periods. In 2018, we expect seasonality due to the Jewish holiday periods to adversely impact the second and third quarters.

The following table presents our revenues allocation per quarter in 2017 and 2016 (in percentage):

	1st quarter	2nd quarter	3rd quarter	4th quarter
2017	23.0 %	24.3 %	25.7 %	27.0 %

2018	23.6	%	23.4	%	25.7	%	27.3	%

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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 2017 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.

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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, 2018.

Subsidiaries and affiliate	Country of Incorporation	Percentage of Ownership	
Matrix IT Ltd.	Israel	49.2	%
Sapiens International Corporation N.V.	Curaçao	48.1	%
Magic Software Enterprises Ltd.	Israel	47.1	%
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.

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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 2017, Magic Software's rent costs totaled $2.7 million, in the aggregate, for all of its leased offices.

Matrix leases approximately 603,000 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 61,350 square feet of office space in locations outside of Israel. The lease terms for the spaces that Matrix currently occupies are generally three to four years. In the year ended December 31, 2017, Matrix's rent costs totaled $18.0 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 135,100 square feet of office space; in the United States, approximately 93,600 square feet; in India, approximately 53,400 square feet; in Poland, approximately 48,100 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 2017, Sapiens rent costs totaled $7.4 million, in the aggregate, for all of its leased offices (which does not include office space leased by KnowledgePrice.com in Latvia, since it was acquired on December 27, 2017, or Adaptik, since it was acquired after December 27, 2017). 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 six remaining years and Sapiens holds an option to extend the term for additional five years.

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 and in accordance with IFRS as of December 31, 2017, 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.

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Our consolidated financial statements for the years ended December 31, 2016 and 2017 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. Accordingly, we have presented herein consolidated statements of financial position that comply with IFRS applicable as of January 1, 2015, in addition to as of December 31, 2015, 2016 and 2017. Our consolidated statements of profit or loss presented herein in IFRS cover the years ended December 31, 2016 and 2017, as well as the year ended December 31, 2015 (as adjusted from its prior preparation in accordance with U.S. GAAP).

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-demarcated 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. We have elected to use the dollar as our 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. 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.

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The consolidation of the financial statements commences on the date on which control is obtained and ends when such control ceases.

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 measures 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 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.

The acquisition of interests in a joint operation which represents a business, as defined in IFRS 3, is accounted for using the acquisition method, including the measurement of the identifiable assets and liabilities at fair value, the recognition of deferred taxes arising from this measurement, the accounting treatment of the related transaction costs and the recognition of goodwill or bargain purchase gains. This applies to the acquisition of the initial interest and additional interests in a joint operation that represents a business.

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.

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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 39, 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.

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.

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. When we act as a principal and are exposed to the risks associated with the transaction, revenues are presented on a gross basis. When we act as an agent and are not exposed to the risks and rewards associated with the transaction, revenues are presented on a net basis. Revenues are measured at the fair value of the consideration less any trade discounts, volume rebates and returns.

We generally consider all arrangements with payment terms extending beyond a minimum of six or a maximum of twelve months from the delivery of the elements not to be fixed or determinable. If the fee is not fixed or determinable, revenue is recognized as payments become due from the customer, provided that all other revenue recognition criteria have been met.

We generally do not grant a right of return to our customers. When a right of return exists, revenue is deferred until the right of return expires, at which time revenue is recognized, provided that all other revenue recognition criteria are met. Deferred revenue includes unearned amounts received under maintenance and support contracts and amounts received from customers but not yet recognized as revenues.

We perform ongoing credit evaluations on our customers. Under certain circumstances, we may require prepayment. An allowance for doubtful accounts is determined with respect to those amounts that we determine to be doubtful of collection. Provisions for doubtful accounts were recorded in general and administrative expenses.

Following are the specific revenue recognition criteria which must be met before revenue is recognized by us and our 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.

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. This type of revenues is 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 in 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) 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 standalone 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.

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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 recognize 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 months will be recognized over the period of the course. Revenues from projects which usually ordered by organizations, will be recognize under the actual inputs recognize using the basis hours actual 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.

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 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. 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 selected 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, due to their high rates of acceptance, the continued reliance on these products by existing customers, and the demand for such products from prospective customers, all of which validate the Group’s expectations) which provides greater amortization expense compared to the revenue-curve method.

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, 2016 and 2017, 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:

	Years
Customer relationship and acquired technology	3-15
Brand names	5
Backlog, non-compete agreements and other intangibles	1-10
Patent	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.

Intangible assets with indefinite useful lives are not systematically amortized and are tested for impairment annually or whenever there is an indication that the intangible asset may be impaired. 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.

We assess the recoverability of our intangible assets on a regular basis by determining whether the amortization of the asset over its remaining useful life can be recovered through undiscounted future operating cash flows from the specific software product sold. During the years ended December 31, 2016 and 2017, no unrecoverable amounts were identified.

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.

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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, 2016 and 2017, no impairment indicators were identified.

Compound financial instruments:

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.

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.

Put option granted to non-controlling interests:

When we grant to the holder of a non-controlling interest in our subsidiary a put option to sell part or all of their interest in that subsidiary during a certain period, on the date of grant, the non-controlling interest is classified as a financial liability under redeemable non-controlling interests.

We re-measure 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 we have present ownership of the non-controlling interest, the non-controlling interest is accounted for as if it is held by us and changes in the amount of the liability are carried to profit or loss. If we do not have present ownership, the interest is accounted for using the partial recognition method. Accordingly, a portion of net profit attributable to non-controlling interests is still allocated to profit or loss but at the end of the reporting period the non-controlling interests are reclassified as a financial liability. The difference between non-controlling interest at the end of the reporting period and the present value of the liability is recognized directly in our equity, under “Adjustment to redeemable non-controlling interests”. 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.

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Disclosure of new standards in the period prior to their adoption

1. IFRS 15, "Revenue from Contracts with Customers":

IFRS 15, or the new Standard, was issued by the IASB in May 2014. The new Standard replaces IAS 18, "Revenue", IAS 11, "Construction Contracts", IFRIC 13, "Customer Loyalty Programs", IFRIC 15, "Agreements for the Construction of Real Estate", IFRIC 18, "Transfers of Assets from Customers" and SIC-31, "Revenue - Barter Transactions Involving Advertising Services".

The new Standard introduces a five-step model that will apply to revenue earned from contracts with 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, financing components that are significant to the contract, non-cash consideration and any consideration payable to the customer.

Step 4: Allocate the transaction price to the separate 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.

The new Standard allows the option of modified retrospective adoption with certain reliefs according to which the new Standard will be applied to existing contracts from the initial period of adoption and thereafter with no restatement of comparative data. Under this option, we will recognize the cumulative effect of the initial adoption of the new Standard as an adjustment to the opening balance of retained earnings (or another component of equity, as applicable) as of the date of initial application. Alternatively, the new Standard permits full retrospective adoption with certain reliefs.

We have established for each of our subsidiaries an implementation team to analyze the potential impact the new Standard will have on our consolidated financial statements and related disclosures as well as on each of our subsidiaries' business processes, systems and controls. This includes reviewing revenue contracts across all revenue streams and evaluating potential differences that would result from applying the requirements under the new Standard. We have adopted the new Standard on January 1, 2018 using the Modified Retrospective Adoption Transition

Method.

We have completed our evaluation of the new Standard and identified that the main impact of the new Standard on our reporting relates to the way we account for term license arrangements and costs incurred for obtaining customer contracts. Specifically, under the current revenue standard, we recognize both the term license and maintenance revenues ratably over the contract period, whereas under the new Standard, term license revenues are recognized upfront, upon delivery, and the associated maintenance revenues are recognized over the contract period. We also considered the impact of IFRS 15 with respect to the treatment of incremental costs of obtaining a contract, such as sales commissions. Under our current accounting policy, sales commissions are expensed as incurred. The new Standard requires the capitalization of all incremental costs that we incur to obtain a contract with a customer that it would not have incurred if the contract had not been obtained, provided we expect to recover the costs.

We have applied the new Standard with respect to Sapiens' existing contracts for term license which are not substantially completed as of January 1, 2018. As a result, we expect to record a decrease to our deferred revenues of approximately $1.5 million mainly from upfront recognition of license revenue from term licenses, an asset of approximately $0.6 million related to incremental costs to obtain contracts which is mainly due to sales commissions, and a decrease to our non-controlling interests of $0.5 million to account for our equity interest in Sapiens.

We have completed our evaluation of the new Standard and do not expect any other material change in our pattern of revenue recognition.

2. IFRS 9, "Financial Instruments"

In July 2014, the IASB issued the final and complete version of IFRS 9, "Financial Instruments," or IFRS 9, which replaces IAS 39, "Financial Instruments: Recognition and Measurement". IFRS 9 mainly addresses the classification, measurement and derecognition of financial assets and financial liabilities, introduces new rules for hedge accounting and a new impairment model for financial assets. IFRS 9 retains but simplifies the mixed measurement model and establishes three primary measurement categories for financial assets: amortized cost, fair value through OCI and fair value through profit or loss. It introduces a new expected credit losses model that replaces the incurred loss impairment model used in IAS 39. For financial liabilities there were no changes to classification and measurement except for the recognition of changes in own credit risk in other comprehensive income, for liabilities designated at fair value through profit or loss.

IFRS 9 is to be applied for annual periods beginning on January 1, 2018. Early adoption is permitted. We do not expect that the amendments to IFRS 9 will have a material impact on our consolidated financial statements.

3. IFRS 16, "Leases":

In January 2016, the IASB issued IFRS 16, “Leases,” or the new Standard. According to the new Standard, 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.

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According to the new Standard:

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”.

According to the new Standard:

- 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 (“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 re-measure the lease liability and the effect of the re-measurement is an adjustment to the carrying amount of the right-of-use asset.

- The new Standard 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.

The new Standard is effective for annual periods beginning on or after January 1, 2019. Early adoption is permitted provided that IFRS 15, “Revenue from Contracts with Customers”, is applied concurrently. For leases existing at the date of transition, the new Standard permits lessees to use either a full retrospective approach, or a modified retrospective approach, with certain transition relief whereby restatement of comparative data is not required.

We are evaluating the possible effects of the new Standard. However, at this stage, the Company is unable to quantify the impact on the financial statements.

4. IFRIC 23 – "Treatment of uncertainty related to taxes on income":

In June 2017, the IASB issued IFRIC 23, "Uncertainty over Income Tax Treatments" (the "Interpretation"). The Interpretation clarifies the rules of recognition and measurement of assets or liabilities in accordance with the provisions of IAS 12, "Income Taxes", in situations of uncertainty involving income taxes. The Interpretation provides guidance on considering whether some tax treatments should be considered collectively, examination by the tax authorities, measurement to reflect uncertainty involving income taxes in the financial statements and accounting for changes in facts and circumstances underlying the uncertainty.

The Interpretation is to be applied in financial statements for annual periods beginning on January 1, 2019. Early adoption is permitted. Upon initial adoption, the Company will apply the Interpretation using one of two approaches:

- Full retrospective adoption, without restating comparative data, by recording the cumulative effect through the date of initial adoption in the opening balance of retained earnings.

- Full retrospective adoption including restatement of comparative data.

We are evaluating the possible impact of the adoption of the Interpretation but are presently unable to assess its effect, if any, on our financial statements.

A. Operating Results

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.

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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	184,116
Operating income	88,500	72,854
Financial expenses	(17,594)	(29,916)
Financial income	6,008	8,749
Group’s share of earnings of companies accounted for at equity, net	349	1,124
Income before taxes on income	77,263	52,811
Taxes on income	21,163	13,371
Net income	$56,100	$39,440
Attributable to:		
Equity holders of the Company	22,445	10,352
Redeemable non-controlling interests	2,125	3,671
Non-controlling interests	31,530	25,417
	$56,100	$39,440

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 %
Income before taxes on income	7 %	4 %
Taxes on income	2 %	1 %
Net income	5 %	3 %
Attributable to:		
Equity holders of the Company	2 %	1 %
Redeemable non-controlling interests Non-controlling interests	3 %	2 %
	5 %	3 %

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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 $90.6 million) in 2017.

Magic Software:

Magic Software's revenues, reported under this revenue stream, increased by 35.8% from $141.1 million to $191.6 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 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 cancelation 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 13.3% from $57.1 million in 2016 to $64.6 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.

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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 Revenues ($ in thousands)	Percentage	Year-over Year change	Year ended December 31, 2017 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.

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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 cancelation 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 2019, 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 $184.1 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.

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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 $72.9 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 Tax Cuts and Jobs 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 redeemable non-controlling interests. Change in redeemable non-controlling interest in 2016 amounted to an expense of $2.1 million. Change in redeemable non-controlling interest in 2017 amounted to an expense of $3.7 million. Net income attributable to redeemable non-controlling interests includes the redeemable non-controlling interests held by other shareholders in our consolidated companies, which were not wholly owned by Formula during each of the periods indicated, as to which we have granted put options to sell part or all of their capital interests in our subsidiary.

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 $31.6 million in 2016 to $25.4 million in 2017, mainly due to the decrease in Sapiens' net income attributable to its shareholders from $19.8 million during the year ended December 31, 2016 to $0.7 million during the year ended December 31, 2017.

Comparison of the years ended December 31, 2016 and 2015

The following tables set forth certain data from our statement of profit or loss for the years ended December 31, 2015 and 2016, 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.

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

	Year ended December 31,	
	2015	2016
Revenues	973,194	1,108,621
Cost of revenues	741,270	849,840
Gross profit	231,924	258,781
Research and development expenses, net	15,123	22,328
Selling, marketing, general and administrative expenses	140,935	147,953
Operating income	75,866	88,500
Financial expenses	(14,955)	(17,594)
Financial income	5,422	6,008
Group’s share of earnings of companies accounted for at equity, net	5	349
Income before taxes on income	66,338	77,263
Taxes on income	15,984	21,163
Net income	$50,354	$56,100
Attributable to:		
Equity holders of the Company	19,829	22,445
Redeemable non-controlling interests	864	2,125
Non-controlling interests	29,661	31,530
	$50,354	$56,100

Statement of Income Data as a

Percentage of Revenues

	Year ended December 31,	
	2015	2016
Revenues	100%	100 %

Cost of revenues	76 %	77 %
Gross profit	24 %	23 %
Research and development expenses, net	2 %	2 %
Selling, marketing, general and administrative expenses	14 %	13 %
Operating income	8 %	8 %
Financial expenses	(2)%	(2)%
Financial income	1 %	1 %
Income before taxes on income	7 %	7 %
Taxes on income	2 %	2 %
Net income	5 %	5 %
Attributable to:		
Equity holders of the Company	2 %	2 %
Non-controlling interests	3 %	3 %
	5 %	5 %

Revenues. Revenues in 2016 increased by 13.9%, from $973.2 million in 2015 to $1,108.6 million in 2016. Revenues from the two categories of our operations were as follows: revenues from the delivery of software services increased by 14.4%, from $730.4 million in 2015 to $835.4 million in 2016, and revenues from the sale of our proprietary software products and related services increased by 12.5%, from $242.8 million in 2015 to $273.2 million in 2016.

The increase in software services revenues was recorded across all our investees reporting under this revenue stream: Matrix, Magic Software and InSync) and primarily due to the growth in

Matrix:

Matrix's revenues increased from NIS 2,280.1 million (approximately $586.6 million) in 2015 to NIS 2,544.6 million (approximately $662.6 million) in 2016, reflecting an increase of 11.6% when measured in NIS, Matrix local currency (compared to 13.0% 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. The increase was primarily attributable to an increase of 9.7 % in Matrix's software solutions and services in Israel business line from NIS 1,409.4 million (approximately $362.6 million) in 2015 to NIS 1,546.3 million (approximately $402.6 million) in 2016 and an increase of 28.6% in Matrix's computer infrastructure and integration solutions from NIS 325.5 million (approximately $83.7 million) in 2015 to NIS 418.5 million (approximately $109.0 million) in 2016. Revenues from Matrix's software product marketing and support business line, were similar in 2016 and 2015.

Magic Software:

Magic Software's revenues, reported under this revenue stream, increased by 20.8% from $116.8 million to $141.1 million, primarily attributable to (i) increased demand for Magic Software's professional services offerings of Comblack IT Ltd and Infinigy Solutions LLC in addition to the inclusion of Infinigy, a Magic Software subsidiary, for the full year (consolidated during the second half of 2015) and (ii) consolidation for the first time 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) offset by a continued decline in Magic Software's professional services provided to Ericsson from $12.9 million in 2015 to $7.6 million in 2016, due to the successful completion of number of projects at Ericsson.

InSync:

InSync's revenues increased by 14.7% from $29.9 million to $34.3 million, primarily attributable to increased demand for InSync's professional services offerings.

The increase in revenues from proprietary software products and related services was attributable to Sapiens' organic growth of approximately $38.0 million, primarily due to implementation and professional services generated from Sapiens existing and new customers, which were offset in part, in an amount of $4.6 million, resulting from to the devaluation of foreign currencies (in which revenues were received) relative to the U.S. dollar. The increase was furthermore due to $3.5 million of revenues attributable to MaxPro and 4Sight results, both subsidiaries of Sapiens, which were included in our consolidated results for the first time for the year ended December 31, 2016.

A breakdown of our overall revenues into proprietary software products and related services and software services revenues for the years ended December 31, 2015 and 2016, 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 2015 to 2016, are provided in the below table:

Revenue category	Year ended December 31, 2015 Revenues ($ in thousands)	Percentage	Year-over Year change	Year ended December 31, 2016 Revenues	Percentage
Proprietary software products and related services	242,818	24.95 %	12.5 %	273,235	24.65 %
Software services	730,376	75.05 %	14.4 %	835,386	75.35 %
Total	973,194	100 %	13.9 %	1,108,621	100 %

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Revenues by geographical region

The dollar amount and percentage share of our revenues attributable to each of the geographical regions in which we conduct our operations for the years ended December 31, 2015 and 2016, respectively, as well as the percentage change between such years, were as follows:

	Year ended December 31,	
	2015	2016
Israel	$570,614	$663,341
International:		
United States	252,526	283,297
Europe	112,169	115,444
Japan	30,009	38,310
Other	7,876	8,229
Total	$973,194	$1,108,621

Cost of Revenues. Cost of revenues consists primarily of wages, personnel expenses, other personnel-related expenses of software consultants, subcontractors and engineers, amortization of capitalized software, and hardware and other materials costs. Cost of revenues increased by 14.6% from $741.3 million in 2015 to $849.8 million in 2016. As a percentage of total revenues, costs of revenues in 2015 and 2016 were 76.2% and 76.7%, 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 $131.1 million in 2015 to $149.2 million in 2016. As a percentage of our proprietary software solutions and related services revenues, costs of revenues for proprietary software solutions and related services in 2015 and 2016 remained relatively stable at 54% in 2015 compared to 54.6% in 2016.

The cost of revenues for software services increased from $610.1 million in 2015 to $700.6 million in 2016. As a percentage of software services revenues, costs of revenues for software services in 2015 and 2016 remained relatively stable at 83.5% in 2015 compared to 83.9% in 2016.

The increase in our cost of revenues was primarily due to the following:

Matrix:

Matrix’s cost of revenues increased 13.7% from $492.8 million in 2015 to $560.4 million in 2016. The increase in absolute cost of revenues was related to the increase in their revenues during the year ended December 31, 2016 relative to the year ended December 31, 2015. The level of Matrix’s cost of revenues as a percentage of their revenues remained relatively stable in 2016 increasing from 84% in 2015 to 84.6% in 2016. The increase in Matrix’s cost of revenues as a percentage of its revenues as recorded in U.S. dollars was primarily attributable to increase in employee salary rates in Israel and in the U.S.

Sapiens:

Sapiens’ cost of revenues increased 14.8% from $110.0 million in 2015 to $126.3 million in 2016. The increase in absolute cost of revenues was related to the increase in its revenues during the year ended December 31, 2016 relative to the year ended December 31, 2015, including due to the inclusion of MaxPro and 4Sight, both subsidiaries of Sapiens, in our consolidated results for the first time for the year ended December 31, 2016. Certain projects in certain non-central locations that are not part of Sapiens core insurance business had a lower degree of profitability, which contributed to the slight increase in Sapiens cost of revenues as a percentage of their revenues. In addition, the appreciation of the NIS relative to the U.S. dollar increased Sapiens cost of revenues as a percentage of their revenues as recorded in U.S. dollars for the year ended December 31, 2016.

Magic Software:

Magic Software’s cost of revenues increased 17.8% from $113.2 million in 2015 to $133.4 million in 2016. The increase in cost of revenues was primarily attributable to (i) the inclusion of Infinigy, a Magic Software subsidiary, for the full year (consolidated during the second half of 2015) and (ii) consolidation for the first time 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), with the remaining increase being consistent with the increase in Magic Software’s revenues from IT consulting services, though offset by continued decline in Magic’s U.S. IT professional services provided to Ericsson.

InSync:

InSync’s cost of revenues increased 18.0% from $25.3 million in 2015 to $29.8 million in 2016. The increase in absolute cost of revenues was related to the increase in its revenues during the year ended December 31, 2016 relative to the year ended December 31, 2015.

Cost of revenues for the years ended December 31, 2015 and 2016 include insignificant amounts of stock-based compensation.

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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 $25.0 million in 2015 to $32.1 million in 2016, mainly due to our greater level of investment in research and development activities both in Magic Software and in Sapiens in support of the expansion of our offering of solutions in the year ended December 31, 2016, including due to the inclusion of MaxPro, 4Sight, both subsidiaries of Sapiens, and Roshtov, a subsidiary of Magic, in our consolidated results for the first time for the year ended December 31, 2016.

In 2016, we capitalized software costs of $9.8 million, compared to $9.9 million in 2015. Capitalization of software costs in 2015 and 2016 was attributable to our subsidiaries engaged in providing proprietary software solutions (i.e., Magic Software and Sapiens). Research and development expenses, net, increased from $15.1 million in 2015 to $22.3 million in 2016, mainly due to the factors described above.

As a percentage of revenues, research and development expenses, net, increased from 1.6% in 2015 to 2.0% in 2016. Research and development expenses for the years ended December 31, 2015 and 2016 include insignificant amounts of stock-based compensation.

Selling, Marketing General and Administrative Expenses. Selling, marketing, general and administrative 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 $140.9 million in 2015 to $148.0 million in 2016. As a percentage of revenues, selling, marketing, general and administrative expenses decreased from 14.5% in 2015 to 13.4% in 2016.

The increase in the absolute amount of selling, general and administrative expenses was primarily attributable to increase in (1) Magic Software's general and administrative expenses increasing from $12.1 million in 2015 to $16.1 million in 2016, mainly attributable to (i) acquisitions of subsidiaries consolidated for the first time in 2016 and to acquisitions completed during 2015 and consolidated for the entire year for the first time in 2016 amounting to $2.8 million; and (ii) valuation of contingent liabilities in acquired subsidiaries amounting to $0.5 million; and (iii) an increase in headcount of general and administrative employees, and (2) Sapiens' selling, marketing general and administrative expenses increasing from $42.6 million in 2015 to $47.1 million in 2016, mainly attributable to a greater investment in Sapiens sales and marketing organizations team and their increased marketing expenses to support their brands and expand sales opportunities, including due to the inclusion of MaxPro and 4Sight, both subsidiaries of Sapiens in our consolidated results for the first time for the year ended December 31, 2016, which was evidenced by Sapiens 16.5% increase in their revenues in the year ended December 31, 2016.

Selling, marketing general and administrative expenses for the years ended December 31, 2015 and 2016 include $4.2 million and $4.3 million, respectively, of stock-based compensation expenses.

***Operating Income*.** Our operating income increased from $75.9 million in 2015 to $88.5 million in 2016. As a percentage of revenues, our operating remained relatively stable increasing from 7.8% in 2015 to 8.0% in 2016. The increase in our operating income during the year ended December 31, 2016 relative to the year ended December 31, 2015 as an absolute amount was attributable to the various gross profit and operating expenses trends described above.

***Financial Expenses, net*.** Financial expenses increased from $15.0 million in 2015 to $17.6 million in 2016. Financial expenses, net increased from $9.5 million in 2015 to $11.6 million in 2016. 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 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 financial expenses in 2016 was primarily attributable to (i) increase in financial expenses recorded with respect to Formula's debentures, which were issued on September 2015, from $0.6 million in 2015 to $2.0 million in 2016 and (ii) increase in financial expenses recorded with respect of change in financial liabilities of put options granted to non-controlling interests from $1.2 million in 2015 to $2.6 million in 2016.

Equity in gains of affiliated companies net. Our equity in gains of affiliated companies, net increased from $5 thousand in 2015 to $349 thousand in 2016. Our equity in gains of affiliates in 2016 was attributable to TSG.

***Taxes on Income*.** Taxes on income increased from $16.0 million in 2015 to $21.2 million in 2016. The increase in our expense from taxes on income was primarily attributable to (i) an increase in our taxable income in the jurisdictions in which we operate, (ii) during the year ended December 31, 2016, certain of our subsidiaries in Israel and the UK became subject to tax liability following the utilization of tax benefits in previous years and (iii) a decrease in deferred tax assets recorded mainly in Matrix and having a negative impact of $0.9 million, resulting from a decrease in Israel's corporate income tax rate from 25% to 23% which was approved by the Israeli parliament on December 2016.

Net income attributable to redeemable non-controlling interests. Change in redeemable non-controlling interest in 2015 amounted to an expense of $0.9 million. Change in redeemable non-controlling interest in 2016 amounted to amounted to an expense of $2.1 million. Net income attributable to redeemable non-controlling interests includes the redeemable non-controlling interests held by other shareholders in our consolidated companies which are not wholly owned by Formula during each of the periods indicated to which we have granted put options to sell part or all of their capital interests in our subsidiary.

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 increased from

$29.7 million in 2015 to $31.6 million in 2016.

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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 representative average exchange rate of the NIS to the dollar in 2016 and 2017, as reported by the Bank of Israel, was NIS 3.8406 per US$1 and NIS 3.5998 per US$1, respectively; consequently, this trend increased the dollar value of our revenues and profitability for our software services in 2017 relative to 2016. On the other hand, a significant portion of our revenues from proprietary software products and related services is currently mainly denominated in U.S dollar, 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 or those other currencies relative to the dollar (as was the case in 2015 and 2016 with respect to the Euro, in 2015 with respect to the Japanese yen, and in 2016 with respect to the British pound following Brexit) reduces the revenue growth rate and profitability for our proprietary software products and related services in dollar terms, thereby adversely affecting our operating results. Contrary to the trend involving software services, the devaluation of the NIS relative to the dollar, which occurred in 2015 (on an average basis), decreases the relative value of the NIS-denominated operating costs related to our proprietary software product revenues, and, 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 Israeli rate of inflation amounted to (-1.0)%, (-0.2%) and 0.4% for the years ended December 31, 2015, 2016 and 2017, respectively. In 2015, the U.S. dollar appreciated relative to the NIS at a rate that eclipsed the Israeli rate of deflation for those years. In 2016 and 2017, the NIS appreciated relative to the U.S dollar.

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$*	Devaluation (appreciation) of Euro against the US$*
	%	%	%
2015	(-1.0)	(0.3)	(10.4)
2016	(-0.2)	1.5	(3.5)
2017	0.4	(9.8)	13.9

*Reflects the change in the exchange rate from January 1 to December 31 of the relevant year, rather than the difference in the average exchange rate over the course of each 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.

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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

Accelerated depreciation rates on equipment and buildings.

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 AE, a Beneficiary Enterprise or a PFE, 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 Beneficiary Enterprise or a PFE 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 by the financial scope of the investment, including sources of funds, and by the physical characteristics of the facility or other assets. 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.

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 2 and 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. The entitlement to the above benefits is subject to fulfillment of certain conditions, according to the law and related regulations.

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:

Percentage of non-Israeli ownership	Corporate Tax Rate
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.

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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 from the end of 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.

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 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.

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Dividends paid out of preferred income 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).

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. As of December 31, 2014 and 2015, some of our Israeli subsidiaries had filed a request to apply the new benefits under the 2011 Amendment.

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” and will thereby enjoy a reduced corporate tax rate of 12% on income that qualifies as “Preferred Technology Income”, as defined in the Investment Law. The tax rate is further reduced to 7.5% for a Preferred Technology Enterprise located in development zone A. These corporate tax rates shall only apply with respect to the portion of intellectual property developed in Israel. 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 (referred to as NATI).

The 2017 Amendment further provides that a technology company satisfying certain conditions will qualify as a "Special Preferred Technology Enterprise" and will thereby benefit from a reduced corporate tax rate of 6% on "Preferred Technology Income" regardless of the company's geographic location within Israel. In addition, a Special Preferred Technology Enterprise 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 an Israeli company or acquired from a foreign company on or after January 1, 2017, and the sale received prior approval from NATI. A Special Preferred Technology Enterprise 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 Preferred Technology Enterprise or a Special Preferred Technology Enterprise, paid out of Preferred Technology Income, 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%.

We are examining the impact of the 2017 Amendment and the degree to which our Israeli subsidiaries and affiliate will qualify as a Preferred Technology Enterprise or Special Preferred Technology Enterprise, and the amount of Preferred Technology Income that our subsidiaries and affiliate may have, or other benefits that our subsidiaries and affiliate may receive, from 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, from the first year that the expenditures were incurred. However, the amounts of any government grants made available are subtracted from the amount of the expenses that may be deducted.

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.

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Current Outlook

We had cash and cash equivalents and short-term investments of $275.7 million and $260.8 million at December 31, 2016 and December 31, 2017, respectively. At December 31, 2016 and December 31, 2017, we had indebtedness to banks and others of $259.0 million and $345.0 million, respectively, of which $88.0 million and $75.6 million were current liabilities and $171.0 million and $269.4 million were long-term liabilities as of those respective dates. In addition, as of December 31, 2017, Formula had indebtedness of $38.9 million outstanding to an Israeli institutional investor and $59.5 million under our secured debentures and convertible debentures which we sold in a public offering in Israel in September 2015, as described below.

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, 2016 and 2017 in amounts of $62.0 million and $48.6 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, as described:

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 standalone balance sheet shall not be higher than NIS 450 million (approximately $115.7 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

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," and, together with the Secured Debentures, the "Debentures") that is convertible into ordinary shares of Formula. The Debentures are 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 the following respective amounts of Series A Secured Debentures and Series B Convertible Debentures that are subject to the following terms:

NIS 102,260,000 ($26.1 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 ($31.2 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 bear interest at a fixed annual rate equal to 2.74% (which may vary based on the credit rating of the debentures), payable in one payment upon maturity of the Series B Convertible Debentures on March 26, 2019 (at which time the accrued interest will constitute 10% of the principal amount of the Convertible Debentures, in the aggregate). The Series B Convertible Debentures are subject to conversion 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 is subject to adjustment for the issuance of bonus shares, rights and dividends. The principal amount of and interest on the Series B Convertible Debentures is 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).

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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.

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). 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.

The Series A Secured Debentures and Series B Convertible 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) 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), (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

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, (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 Convertible Debentures.

We have agreed to standard events of default under the 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 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 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%. The long-term debt obligations of Magic Software bear fixed interest at an annual rate of 2.60%-5.0%. The long-term debt obligations of Sapiens bear fixed interest at an annual rate of 3.7%. These credit facilities and/or debentures expire over a period of time that ranges from 1 to 9 years.

As of December 31, 2017, Matrix had aggregate short-term obligations to banks and others of NIS 164.5 million (approximately $47.5 million) and aggregate long-term obligations to banks of NIS 285.1 million (approximately $82.2 million) under its credit facilities. As of December 31, 2017, Magic Software had aggregate short-term obligations to banks and others of $9.8 million and aggregate long-term obligations to banks and others of $27.8 million under its credit facilities.

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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 $78.2 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 $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.

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. 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 will 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 January 24, 2018, Formula publicized rating reports published by Standard & Poor’s, Maalot Ltd. (“S&P Maalot”) and Midroog Ltd., a subsidiary of Moody’s (“Midroog”), with respect to Formula and its two outstanding series of Debentures. In those reports, S&P Maalot, which had previously rated the Company and its two series of Debentures, assigned an updated rating of ilA+ for both series of Debentures and an updated rating of ilA+/stable for the Company. Midroog, which was rating the Company’s Debentures for the first time, assigned a rating of A1.il for both series of Debentures.

On March 19, 2018, S&P Maalot issued a report in which it upgraded the credit rating for the Series A Secured Debentures of Formula to ilAA- (from ilA+). The upgrade was made by S&P Maalot following the implementation for the first time of recovery rating criteria for speculative grade corporate issuers. The valuation methodology employed by S&P Maalot analyzes, among other things, the likely percentage of indebtedness to be repaid to the debenture holders from the assets serving as security in the event of a hypothetical failure by the Company to make payment on the debentures. S&P Maalot has also reaffirmed the credit rating of Formula’s Series B Convertible Debentures, which remains unchanged at ilA+, identical to the rating assigned to Formula itself.

As of the date of the financial statements, 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 $75.0 million in 2016 to $81.0 million in 2017.

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, (iii) stock-based compensation expenses, in an amount of $4.6 million, (iv) changes in value of short-term and long term loans from banks and others and deposits in an amount of $6.7 million, (v) change in value of debentures of $5.3 million, (vi) an increase in liabilities in respect of business combinations, in an aggregate amount of $1.5 million and (vii) 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) equity in gains of companies accounted for at equity 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.

Net cash provided by operating activities in 2016 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 $32.4 million, (ii) stock-based compensation expenses, in an amount of $4.4 million, (iii) an increase in trade payables and in other accounts payable and employees and payroll accrual, in an aggregate amount of $14.1 million, (iv) an increase in redeemable non-controlling interests' put option and in liabilities in respect of business combinations, in an aggregate amount of $3.8 million, and (v) decrease in inventory of $0.9 million, (vi) change in value of debentures of $1.4 million and (vii) changes in value of short-term and long term loans from banks and others and deposits in an amount of $0.5 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 $30.1 million, (ii) a decrease in deferred revenues, in an amount of $2.7 million, (iii) gain from sale of property, plants and equipment in an amount of $3.1 million, (iv) decrease in employee benefit liabilities in an amount of $1.7 million and (v) Increase in other current and long-term accounts receivable of $0.5 million.

Cash flow provided by operating activities in 2016 was primarily comprised of $29.8 million provided by Matrix, $26.0 million provided by Sapiens, and $28.0 million provided by Magic, offset by $5.4 million used by Formula and approximately $3.4 million used by Insync.

Cash provided by (used in) Financing Activities

Cash provided by financing activities of $16.4 million in 2017 compared to cash used in financing activities of $7.0 million in 2016, mainly reflecting the cumulative effect of the following financing-related transactions that occurred over the course of those years:

Year Ended December 31, 2017

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

In September 2017, Formula declared a cash dividend to its shareholders, to be paid in November 2017, of $0.34 per share. 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 the aggregate amount of $0.20 per common shares. 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 that 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.

Year Ended December 31, 2016

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

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

In March 2016, Matrix distributed to its shareholders a cash dividend in an aggregate amount of approximately $6.4 million, of which $3.2 million was paid to non-controlling interests in Matrix.

In June 2016, Matrix distributed to its shareholders a cash dividend in an aggregate amount of approximately $6.0 million, of which $3.0 million was paid to non-controlling interests in Matrix.

In September 2016, Matrix distributed to its shareholders a cash dividend in an aggregate amount of approximately $7.8 million, of which $3.9 million was paid to non-controlling interests in Matrix.

In December 2016, 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 June 2016, Sapiens distributed to its shareholders a cash dividend in an aggregate amount of $0.20 per common shares. The aggregate amount distributed by Sapiens was approximately $10.0 million.

In February 2016, Magic Software declared a cash dividend in an amount of $0.09 per share that was paid on March 17, 2016. The aggregate amount distributed by Magic Software was approximately $4.0 million.

In August 2016, Magic Software declared a cash dividend in an amount of $0.085 per share that was paid on September 22, 2016. The aggregate amount distributed by Magic Software was approximately $3.8 million.

In addition, net cash used in financing activities in 2016 was attributable to (i) repayment of long term loans from banks and others in an amount of $37.4 million, (ii) purchase of non-controlling interests and redeemable non-controlling interests in an amount of $3.2 million (iii) cash paid in conjunction with acquisition of activities in an amount of $1.2 million and (iv) distribution of $1.4 million to our ultimate parent company for a business acquisition under common control (that is, for the acquisition of Insseco), offset by (i) receipt of long term loans in an amount of $49.6 million (ii) exercise of employees stock options in subsidiaries in an amount of $0.9 million and (iii) an increase in short-term bank credit, net in an amount of $20.7 million.

Cash Used in Investing Activities

Net cash used in our investing activities was $102.5 million in 2017 compared to $78.9 million in 2016. Net cash used in investing activities in 2017 was attributable to (i) expenditure (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 cost in an amount of $9.3 million, (iv) payments to former shareholders of consolidated companies in an amount of $6.2 million and (v) changes in short term deposits, net in an amount of $0.9 million, offset by (i) proceeds from sale of marketable securities, net in an amount of $40.6 million and (ii) change in restricted cash and other accounts receivable in an amount of $2.0 million.

Net cash used in our investing activities in was $78.9 million in 2016. Net cash used in investing activities in 2016 as attributable to (i) expenditure (net of cash acquired) with respect to business acquisitions in an amount of $44.8

million, (ii) purchase of property and equipment in an amount of $9.1 million, (iii) Investment in and loans to affiliates and other companies $25.8 million, (iv) capitalization of software development and other cost in an amount of $9.8 million, (v) increase in restricted cash in other accounts receivable in an amount of $0.5 million and (vi) payments to former shareholders of consolidated companies in an amount of $1.8 million, offset by (i) proceeds from sale of marketable securities, net in an amount of $8.5 million and (ii) proceeds from sale of property, plants and equipment in an amount of $2.3 million and (iii) changes in short term deposits, net in an amount of $2.7 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 are 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. 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, 2017 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, 2017 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, 2017 have provided bank guarantees aggregating to approximately $29.7 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, 2017 have also provided additional bank guarantees aggregating to $4.5 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 described above, liens have been incurred over a certain portion of our investment in outstanding shares of Matrix, Sapiens and Magic Software.

We and IAI granted TSG, our jointly controlled affiliate, in equal share, a guarantee of NIS 40 million (approximately $11.5 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 2016 and 2017 were $22.3 million and $39.9 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 information see discussion in Item 4. “Information on the Company— Business Overview— Industry Background and Trends” and Item 5. “Operating and Financial Review and Prospects - Results of Operations.”

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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, 2017.

	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)	283,783	52,177	118,432	65,832	47,342
Lease obligations	65,019	31,030	28,225	5,764	-
Liabilities in respect of the acquisitions of operations	10,948	7,050	3,898	-	-
Debentures	155,739	6,516	68,041	31,231	49,951
Liability to the Innovation Authority (2)	254	254	-	-	-
Uncertainties in income taxes (3)	4,509	-	-	-	-
Accrued severance payments, net (4)	9,032	-	-	-	-
Total	529,284	97,027	218,596	102,827	97,293

(1) Includes interest.

(2) Does not include contingent liabilities to the Innovation Authority of approximately $7.1 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.

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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	50	Chief Executive Officer	December 2019 or upon 180 days advanced written notice of either party
Asaf Berenstein	40	Chief Financial Officer	No formal arrangement regarding expiration of term of office
Maya Solomon-Ella	40	Chief Operational Officer	No formal arrangement regarding expiration of term of office
Marek Panek	48	Chairman of the Board of Directors	2018 annual shareholders meeting
Rafal Kozlowski	44	Director	2018 annual shareholders meeting
Dafna Cohen [(1) (3)]	48	Director	2018 annual shareholders meeting
Eli Zamir[(1) (2) (3)]	49	External director	December 2018
Iris Yahal[(1) (2) (3)]	56	External director	December 2018

(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 Berenstin has served as our Chief Financial Officer since November 2011. Mr. Berenstin also serves as the Chief Financial Officer of our subsidiary, Magic Software, since April 2010. Prior to such time, beginning in August 2008, Mr. Berenstin served as Magic Software’s corporate controller. Mr. Berenstin 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. Berenstin served as a controller at Gilat Satellite Networks Ltd. (NASDAQ: GILT), commencing in July 2007. From October 2003 to July 2007, Mr. Berenstin practiced as a certified public accountant at Kesselman & Kesselman, a member of PriceWaterhouseCoopers. Mr. Berenstin 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 Vice President of the Board of Directors 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 Chairman of the Board of Directors of Asseco Denmark (since March 2011), Chairman of the Supervisory Board of Asseco Resovia S.A. (since June 2016, former President of the Management Board), Supervisory Board Member of Asseco Central Europe, a.s. (since September 2011), Supervisory Board Member of Sintagma UAB (since April 2011), Supervisory Board Member of Asseco Lietuva UAB (since June 2011), Supervisory Board Member of Asseco Kazahstan LLP (since June 2014), Member of the Board of Directors of ZAO R-Style Softlab (from May 2014 to March 2017), Member of the Board of Directors of Peak Consulting Group ApS (since January 2016), President of the Management Board of Asseco Enterprise Solutions a.s. (since December 2016), Supervisory Board Member of Insseco Sp. Z o.o (from February 2015 to July 2015), Supervisory Board Member of Asseco Bel LLC (from June 2015 to April 2016), Supervisory Board Member of Asseco Northern Europe S.A. (2010-2013), Chairman of the Board of Asseco DACH (2008-2011). During 2007-2008, Mr. Panek served as the Chairman of the Management Board of Asseco SEE and President of the Board of Asseco Romania. 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.

Rafał 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.

Dafna Cohen has served as one of our directors since October 2009, as a member of our audit committee since January 2011 and as a member of our compensation committee since July 2013. Ms. Cohen is the Head of Business Control and Investor Relations of EL-AL Israel Airlines Ltd (TASE). Ms. Cohen has served as a member of board of directors of Gilat Satellite Networks Ltd since 2014 (NASDAQ and TASE). Ms. Cohen served as Director of Global Treasury of MediaMind Technologies Inc. (previously NASDAQ) and as a member of Investment Committee of the Board from 2010 to 2011. Prior to that, Ms. Cohen served as a Director of Investments and Treasurer of Emblaze Ltd. and as a member of Investment Committee of the Board from 2005 to 2009 (LSE). Prior to that, Ms. Cohen served as an Investment Manager for Leumi Partners and as a manager at the derivatives sector of Bank Leumi. Ms. Cohen previously served as a member of boards of directors of XTL Biopharmaceuticals Ltd. (NASDAQ and TASE) from 2009 to 2015, Europort Ltd. from 2012 to 2014 (TASE) and of Inventech Central Ltd from 2011 to 2012 (TASE). Ms. Cohen holds an M.B.A. in finance and accounting and a B.A. degree in economics and political science, both from The Hebrew University of Jerusalem.

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 26% of our outstanding share capital and voting rights to approximately 46.3% 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

In 2017, Formula paid to its directors and executive officers, consisting of the individuals listed above in the table under "—Directors and Senior Management", direct remuneration and provided related benefits of approximately $2.3 million (including stock based compensation in a total amount of $1.1 million), in the aggregate with respect to 2017. This aggregate compensation amount includes amounts set aside or accrued to provide pension, retirement or similar post-employment benefits, which themselves totaled less than $6,000 in 2017. In addition, Formula recorded with respect to its directors and executive officers expenses with respect to equity based compensation in a total amount of $1.1 million for 2017.

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The above aggregate compensation amount does not 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 2017 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 tables below reflect the compensation paid to our five most highly compensated office holders during or with respect to the year ended December 31, 2017. All amounts reported in the table reflect the cost to the Company, as recognized in our financial statements for the year ended December 31, 2017.

Compensation of Management[1]

Name and Position[(2), (3)]	Salary ($)	Benefits And Perquisites ($)	Variable Compensation ($)	Equity Based Compensation ($) [(5)]
Guy Bernstein – CEO	508,000	(4)	(6)	(7)
Maya Solomon-Ella – COO	122,000	37,209	28,500	-

(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 officer listed in the table is a full-time employee 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 2017.

(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 $130,500 in 2017 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, 2017 with respect to equity-based compensation. Assumptions and key variables used in the calculation of such amounts are described in Note 17(a) 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.

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(7) In March 2012, concurrently with the amendment and extension of Mr. Bernstein's service agreement as our Chief Executive Officer, our Board of Directors awarded him options exercisable for 1,122,782 ordinary shares of Formula, which took the place of 543,840 redeemable ordinary shares that had been granted to him in March 2011 and had been redeemed by Formula. The exercise price of the options granted in March 2012 was NIS 0.01 per share, and the options were exercised in their entirety in June 2013 by Mr. Bernstein. Our redemption right with respect to the ordinary shares issuable upon exercise of these options lapses in equal quarterly installments over an eight-year period that commenced in March 2012 and concludes on December 31, 2019. This March 2012 grant has been accounted for by Formula as a modification to the March 2011 grant to Mr. Bernstein. On August 3, 2017 and on August 22, 2017, Asseco sold 2,356,605 and 589,151, Formula ordinary shares, respectively, 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 sales caused Asseco's equity interest in Formula to decrease from 46.3% to 26.3% and resulted in its loss of control of Formula. In accordance with Mr. Bernstein's share based award plan, such loss of control of Asseco over Formula resulted in the immediate acceleration of all of his unvested shares, which amounted to 350,869 as of such date. The total compensation expense that we recorded in our statement of profit or loss for the year ended December 31, 2017 in respect of Mr. Bernstein's March 2012 options grant (constituting his equity compensation for all of 2017) was $928,000.

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 2017. The fees to the directors were paid by Formula.

Name and Principal Position	**Total Fees Earned or Paid in Cash ($)[(1)]**
Marek Panek - Chairman	33,000
Rafal Kozlowski - Director	33,000
Dafna Cohen - Director	36,500
Eli Zamir - External Director	37,400
Iris Yahal - External Director	55,300

(1) All amounts reported in the table are in terms of cost to Formula, as recorded in Formula's financial statements.

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.

Option 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 April 31, 2018 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 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 April 30, 2018 all 10,000 additional restricted shares were deposited with the trustee, of which 1,667 shares have 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 Issue or Grant of Options to Purchase Shares” 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, 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.

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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, 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