ANSYS INC
Form 10-K
February 23, 2017

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549
FORM 10-K
(Mark One)

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

For the fiscal year ended
December 31, 2016
OR

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

Commission File Number
0-20853
ANSYS, Inc.
(Exact name of registrant as
specified in its charter)

Delaware	04-3219960
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
2600 ANSYS Drive, Canonsburg, PA	15317
(Address of principal executive offices)	(Zip Code)

844-462-6797
(Registrant's telephone number, including area code)
Securities registered pursuant to Section 12(b) of the Act:

Common Stock, $0.01 par value per share	The NASDAQ Stock Market, LLC
(Title of each class)	(Name of exchange on which registered)

Securities registered pursuant to Section 12(g) of the Act:
None
(Title of class)
Indicate by a check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes x No ¨

Indicate by a check mark if the registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. Yes ¨ No x

Indicate by a 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 x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate website, 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 x No ¨

Indicate by a check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein and will not be contained, to the best of the Registrant's knowledge, in definitive proxy or information statements incorporated by reference in PART III of this Form 10-K, or any amendment to this Form 10-K. ¨

Indicate by a check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, or a smaller reporting company (as defined in Exchange Act Rule 12b-2). (Check one):

Large accelerated filer x Accelerated filer ¨

Non-accelerated filer ¨ Smaller reporting company ¨

Indicate by a check mark whether the registrant is a shell company (as defined in Exchange Act Rule 12b-2). Yes ¨ No x

The aggregate market value of the voting stock held by non-affiliates of the Registrant, based upon the closing sale price of the Common Stock on June 30, 2016 as reported on the NASDAQ Global Select Market, was $6,086,000,000. Shares of Common Stock held by each officer and director, and each shareholder who owns 5% or more of the outstanding Common Stock have been excluded in that such shareholders may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of shares of the Registrant's Common Stock, par value $.01 per share, outstanding as of February 14, 2017 was 85,373,363 shares.

Documents Incorporated By Reference:

Portions of the Proxy Statement for the Registrant's 2017 Annual Meeting of Stockholders are incorporated by reference into Part III.

ANSYS, Inc.
ANNUAL REPORT ON FORM 10-K FOR FISCAL YEAR 2016
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Important Factors Regarding Future Results

Information provided by ANSYS, Inc. (hereafter the "Company" or "ANSYS"), in this Annual Report on Form 10-K, may contain forward-looking statements concerning such matters as projected financial performance, market and industry segment growth, product development and commercialization, acquisitions or other aspects of future operations. Such statements, made pursuant to the safe harbor established by the securities laws, are based on the assumptions and expectations of the Company's management at the time such statements are made. The Company cautions investors that its performance (and, therefore, any forward-looking statement) is subject to risks and uncertainties. Various important factors including, but not limited to, those discussed in Item 1A. Risk Factors, may cause the Company's future results to differ materially from those projected in any forward-looking statement. All information presented is as of December 31, 2016, unless otherwise indicated.

PART I

ITEM 1. BUSINESS

ANSYS, a Delaware corporation formed in 1994, develops and globally markets engineering simulation software and services widely used by engineers, designers, researchers and students across a broad spectrum of industries and academia, including aerospace and defense, automotive, industrial equipment, electronics, biomedical, energy, materials and chemical processing, and semiconductors. Headquartered south of Pittsburgh, Pennsylvania, the Company and its subsidiaries employed approximately 2,800 people as of December 31, 2016. The Company focuses on the development of open and flexible solutions that enable users to analyze designs directly on the desktop, providing a common platform for fast, efficient and cost-conscious product development, from design concept to final-stage testing and validation. The Company distributes its ANSYS® suite of simulation technologies through a global network of independent resellers and distributors (collectively, channel partners) and direct sales offices in strategic, global locations. It is the Company's intention to continue to maintain this hybrid sales and distribution model.

The Company's product portfolio consists of the following:

Simulation Platform: ANSYS Workbench™

ANSYS Workbench is the framework upon which the Company's suite of advanced engineering simulation technologies is built. The innovative project schematic view ties together the entire simulation process, guiding the user through complex multiphysics analyses with drag-and-drop simplicity. With bi-directional computer-aided design ("CAD") connectivity, powerful highly-automated meshing, a project-level update mechanism, pervasive parameter management and integrated optimization tools, the ANSYS Workbench platform delivers unprecedented productivity, enabling Simulation-Driven Product Development.™

Simulation Process and Data Management

ANSYS Engineering Knowledge Manager ("ANSYS EKM™") is a comprehensive solution for simulation-based process and data management challenges. ANSYS EKM provides solutions and benefits to all levels of a company, enabling an organization to address the critical issues associated with simulation data, including backup and archival, traceability and audit trail, process automation, collaboration and capture of engineering expertise, and intellectual property protection.

High-Performance Computing

The Company's high-performance computing ("HPC") product suite enables enhanced insight into product performance and improves the productivity of the design process. The HPC product suite delivers cross-physics parallel processing capabilities for the full spectrum of the Company's simulation software by supporting structures, fluids, thermal and electronics simulations. This product suite decreases turnaround time for individual simulations, allowing users to consider multiple design ideas and make the right design decisions early in the design cycle.

Geometry Interfaces

The Company offers comprehensive geometry handling solutions for engineering simulation in an integrated environment with direct interfaces to all major CAD systems, support of additional readers and translators, and an integrated geometry modeler exclusively focused on analysis.

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Meshing
Creating a mesh that transforms a physical model into a mathematical model is a critical and foundational step in almost every engineering simulation study. Accurate meshing is especially challenging today with increasing product design complexity and heightened expectations of product performance. The Company's meshing technology provides a means to balance these requirements, obtaining the right mesh for each simulation in the most automated way possible. The technology is built on the strengths of world-class leading algorithms that are integrated in a single environment to produce extremely robust and reliable meshing.
Customization
ANSYS Workbench enables companies to create a customized simulation environment to deploy specialized simulation best practices and automations unique to their product development process or industry. With ANSYS ACT, end users or ANSYS partners can modify the user interface, process simulation data or embed third-party applications to create specialized tools based on ANSYS Workbench.
Structures
The Company's structural analysis product suite offers simulation tools for product design and optimization that increase productivity, minimize physical prototyping and help to deliver better and more innovative products in less time. These tools tackle real-world analysis problems by making product development less costly and more reliable. In addition, these tools have capabilities that cover a broad range of analysis types, elements, contacts, materials, equation solvers and coupled physics capabilities all targeted toward understanding and solving complex design problems.
Explicit Dynamics
The Company's explicit dynamics product suite simulates events involving short duration, large strain, large deformation, fracture, complete material failure or structural problems with complex interactions. This suite is ideal for simulating physical events that occur in a short period of time and may result in material damage or failure. Such events are often difficult or expensive to study experimentally.
Composites
Composites blend two or more materials that possess very different properties. The Company's composite analysis and optimization technology efficiently defines materials, plies and stacking sequences, and also offers a wide choice of state-of-the-art failure criteria. The Company's composite software provides all necessary functionalities for finite element analysis of layered composites structures.
Fluids
The Company's fluids product suite enables modeling of fluid flow and other related physical phenomena. Fluid flow analysis capabilities provide all the tools needed to design and optimize new fluids equipment and to troubleshoot already existing installations. The suite contains general-purpose computational fluid dynamics software and specialized products to address specific industry applications.
Electronics
The Company's electronics product suite provides field simulation software for designing high-performance electronic and electromechanical products. The software streamlines the design process and predicts performance of mobile communication and internet-access devices, broadband networking components and systems, integrated circuits ("ICs") and printed circuit boards ("PCBs"), as well as electromechanical systems such as automotive components and power electronics equipment, all prior to building a prototype.
Semiconductors
Advancements in semiconductor design and manufacturing enable smaller electronic architectures. Shrinking geometries, especially in the emerging 3D IC, FinFET and stacked-die architectures, reveal design challenges related to power and reliability. The Company's power analysis and optimization software suite manages the power budget, power delivery integrity and power-induced noise in an electronic design, from initial prototyping to system sign-off. These solutions deliver accuracy with correlation to silicon measurement; the capacity to handle an entire electronic system, including IC, package and PCB, efficiently for ease-of-debug and fast turnaround time; and comprehensiveness to facilitate cross-domain communications and electronic ecosystem enablement.

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Multiphysics

The Company's Workbench framework allows engineers and designers to incorporate the compounding effects of multiple physics into a virtual prototype of their design and simulate its operation under real-world conditions. As product architectures become smaller, lighter and more complex, companies must be able to accurately predict how products will behave in real-world environments, where multiple types of physics interact in a coupled way. ANSYS multiphysics software enables engineers and scientists to simulate the interactions between structures, heat transfer, fluids and electronics all within a single, unified engineering simulation environment.

AIM®

AIM is a single-window application which integrates structural, fluids and electromagnetics simulation and includes all aspects of the simulation workflow. Its easy-to-use interface and guided workflows are designed for casual simulation users, and its integrated 3-D modeling and optimization tools are well-suited for exploring designs early in the product lifecycle. AIM's user interface is easily customized to comply with a company's standards for simulation or to create simulation templates for unique industry applications. AIM is based on the same, industry-proven solver technology from the fluids, structures and electronics suites and provides fast and accurate results.

Embedded Software

The Company's SCADE product suite is a comprehensive solution for embedded software simulation, code production and automated certification. It has been developed specifically for use in critical systems with high dependability requirements, including aerospace, rail transportation, nuclear, industrial and, more recently, automotive applications. SCADE software supports the entire development workflow, from requirements analysis and design, through verification, implementation and deployment. SCADE solutions easily integrate with each other and the rest of the ANSYS product suite, allowing for development optimization and increased communication among team members.

Systems

The Company delivers a unique and comprehensive system simulation capability that is ideal for the design of today's increasingly automated products. This collaborative environment leverages the Company's multiphysics, multibody dynamics, circuit and embedded software simulation capabilities, enabling users to simulate the complex interactions between components, circuits and control software within a single environment. These technologies provide a complete view into predicted product performance, which creates greater design confidence for engineers.

3-D Direct Modeling

The Company's 3-D direct modeling technology provides a CAD-neutral environment to modify and prepare geometry for simulation. This approach allows engineers to dramatically reduce the pre-processing step in simulation, and ultimately delivers product design insights much faster in the earliest stages of development.

Academic

The Company's academic product suite provides a highly scalable portfolio of academic products based on several usage tiers, including associate, research and teaching. Each tier includes various noncommercial products that bundle a broad range of physics and advanced coupled field solver capabilities. The academic product suite provides entry-level tools intended for class demonstrations and hands-on instruction. It includes flexible terms of use and more complex analysis suitable for doctoral and post-doctoral research projects. The Company also provides a special product at no cost to students that is suitable for use away from the classroom and in non-commercial applications.

PRODUCT DEVELOPMENT

The Company makes significant investments in research and development and emphasizes frequent, integrated product releases. The Company's product development strategy centers on ongoing development and innovation of new technologies to increase productivity and to provide engineering simulation solutions that customers can integrate into enterprise-wide product lifecycle management ("PLM") systems. The Company's product development efforts focus on extensions of the full product line with new functional modules, further integration with CAD, electronic CAD ("ECAD"), PLM products and the development of new products. The Company's products run on the most widely used engineering computing platforms and operating systems, including Windows, Linux and most UNIX workstations.

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During the year ended December 31, 2016 and in the period from January 1, 2017 until the filing date, the Company completed the following major product development activities and releases:

- In January 2017, the Company announced the release of ANSYS 18.0 with major advancements in the entire product portfolio to create complete and accurate digital prototypes across the major physics areas. ANSYS 18.0 expanded the boundaries of simulation with new developments to enable simulation earlier in the product lifecycle, as well as downstream in the operation phase, using digital twins. A digital twin is a real-time, virtual copy of an actual operating machine that provides insight into individual product performance and maintenance. Additionally, ANSYS 18.0 introduced a new, comprehensive fluids product, which includes full versions of all ANSYS fluids solvers for customers solving the toughest and broadest range of fluid dynamics problems. New technology in the structures product line was delivered to design and optimize products for additive manufacturing methods, and a new automotive embedded software package was introduced for developing advanced driver assistance systems applications.
- In August 2016, ANSYS 17.2 was released with new functionality for antenna design to meet the growing demand of wireless devices and the Internet of Things, as well as enhanced multiphysics coupling for electronics and electric motors. ANSYS 17.2 also included improved links to other tools in the product development lifecycle. The embedded software suite added new interoperability with third-party requirement management tools, and the fluids suite was extended to allow detailed combustion models to be included in third-party 1-D simulation products.
- In May 2016, the Company announced the release of ANSYS 17.1 which featured enhancements to the electronics, semiconductor, structures and fluids product lines. AIM, the Company's immersive, multiphysics user environment, was enhanced to support magnetostatics and coupled magnetic-thermal-structural analysis to rapidly design electromechanical products. Polymer extrusion simulation was also added in AIM. With ANSYS 17.1, structures, electronics and embedded software customers gained access to entry-level system simulation capabilities to analyze how detailed component physics and embedded controls affect overall system design.
- In the second quarter of 2016, the Company announced ANSYS SeaScape™, a unique architecture which provides services for elastic computing, machine learning and big data analytics for engineering simulation applications. With the SeaScape architecture, computation can be easily scaled across commodity hardware to deliver broad and rapid simulation coverage. Additionally, SeaScape provides a high-level programming interface to perform data analytics on large simulation datasets to identify actionable design changes. ANSYS SeaHawk™ is the first new product to take advantage of the new architecture for electronic design automation. ANSYS SeaScape allows designers of advanced system-on-chip designs to assess more electromigration and voltage drop scenarios per day than with traditional architectures and develop a high level of confidence of their design prior to sign-off.
- In January 2016, the Company released ANSYS 17.0. Demonstrable order of magnitude speed-ups were made across fluids, structures and electromagnetic simulation with HPC solutions. Engineering teams can leverage this power from their desktop or Cloud environments. Significant innovation was delivered across all physics domains in ANSYS 17.0 as well as in the area of complete virtual prototyping, allowing for full systems simulations. The ANSYS Workbench platform expanded its integrated interface for customization to cover virtually the entire portfolio as well as third-party solutions, sustaining its leadership as the industry's broadest engineering simulation platform.

The Company's total research and development expenses were $183.1 million, $168.8 million and $165.4 million in 2016, 2015 and 2014, respectively, or 18.5%, 17.9% and 17.7% of total revenue, respectively. As of December 31, 2016, the Company's product development staff consisted of approximately 1,000 employees, most of whom hold advanced degrees and have industry experience in engineering, mathematics, computer science or related disciplines. The Company has traditionally invested significant resources in research and development activities and intends to continue to make investments in expanding the ease of use and capabilities of its broad portfolio of simulation software products. More specifically, this includes the evolution of its ANSYS Workbench platform, expansion of high-performance computing capabilities, ANSYS AIM immersive user interface, offerings on ANSYS Enterprise Cloud™, robust design and ongoing integration of acquired technology.

PRODUCT QUALITY

The Company's employees generally perform product development tasks according to predefined quality plans, procedures and work instructions. Certain technical support tasks are also subject to a quality process. These plans

define for each project the methods to be used, the responsibilities of project participants and the quality objectives to be met. The majority of software products are developed under a quality system that is certified to the ISO 9001:2008 standard. The Company establishes quality plans for its products and services, and subjects product designs to multiple levels of testing and verification in accordance with processes established under the Company's quality system.

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SALES AND MARKETING

The Company distributes and supports its products through a global network of independent channel partners, as well as through its own direct sales offices. This channel partner network provides the Company with a cost-effective, highly-specialized channel of distribution and technical support. It also enables the Company to draw on business and technical expertise from a global network, provides relative stability to the Company's operations to offset geography-specific economic trends and provides the Company with an opportunity to take advantage of new geographic markets. The Company derived 24.4%, 24.2% and 24.9% of its total revenue through the indirect sales channel for the years ended December 31, 2016, 2015 and 2014, respectively.

The channel partners sell ANSYS products to new customers, expand installations within the existing customer base, offer training and consulting services, and provide the first line of ANSYS technical support. The Company's channel partner certification process helps to ensure that each channel partner has the ongoing capability to adequately represent the Company's expanding product lines and to provide an acceptable level of training, consultation and customer support.

The Company also has a direct sales management organization in place to develop an enterprise-wide, focused sales approach and to implement a worldwide major account strategy. The sales management organization also functions as a focal point for requests to ANSYS from the channel partners and provides additional support in strategic locations through the presence of direct sales offices.

During 2016, the Company continued to invest in its existing domestic and international strategic sales offices. In total, the Company's direct sales organization comprises 1,300 employees who are responsible for the sales, technical support, consulting services, marketing initiatives and administrative activities designed to support the Company's overall revenue growth and expansion strategies.

The Company's products are utilized by organizations ranging in size from small consulting firms to the world's largest industrial companies. No single customer accounted for more than 5% of the Company's revenue in 2016, 2015 or 2014.

Information with respect to foreign and domestic revenue may be found in Note 16 to the consolidated financial statements in Part IV, Item 15 of this Annual Report on Form 10-K and in the section entitled “Management's Discussion and Analysis of Financial Condition and Results of Operations” in Part II, Item 7 of this Annual Report on Form 10-K.

STRATEGIC ALLIANCES AND MARKETING RELATIONSHIPS

The Company has established and continues to pursue strategic alliances with advanced technology suppliers, hardware vendors, specialized application developers, and CAD, ECAD and PLM providers. The Company believes that these relationships facilitate accelerated incorporation of advanced technology into the Company's products, provide access to new customers, expand the Company's sales channels, develop specialized product applications and provide direct integration with leading CAD, electronic design automation ("EDA"), product data management and PLM systems.

The Company has technical and marketing relationships with leading CAD vendors, such as Autodesk, PTC and Siemens Product Lifecycle Management Software, to provide direct links between products. These links facilitate the transfer of electronic data models between the CAD systems and ANSYS products.

The Company also has a relationship with Spatial Corp. to provide the 3-D modeling kernel technology upon which the Company's in-house geometry modeling software solutions are built.

Similarly, the Company maintains marketing and software development relationships with leading EDA software companies, including Cadence Design Systems, Synopsys, Mentor Graphics, Zuken and National Instruments. These relationships support the transfer of data between electronics design and layout software and the ANSYS electronics simulation portfolio.

The Company has established various initiatives with partners to increase customers' engineering productivity by simplifying and increasing the adoption of HPC. For example, the Company has partnered with companies like Fujitsu, HPE and Lenovo, and developed turn-key HPC appliances which are out-of-the-box, plug-and-simulate, externally managed HPC clusters, optimized for ANSYS applications, and pre-configured with ANSYS software and job management software. In addition, the Company joined the OpenHPC community to enable customers to reduce

risk and to save time with specifying, deploying and managing HPC systems. In 2015, ANSYS and Cray, working in conjunction with the NCSA and NERSC supercomputing centers, established a new simulation world record by scaling ANSYS Fluent® to 129,000 compute cores.

In the area of cloud computing, the Company has tightened its partnership with Amazon Web Services by providing enterprise customers a reference architecture for end-to-end simulation that can be globally deployed in a virtual private cloud on demand. The Company's open cloud strategy allows it to work with various public cloud providers and cloud hosting partners. Due to

the Company's participation in the AWS Partner Network, the Company was able to work with other partners who had extensive expertise running workloads in the Cloud, such as Cycle Computing and NICE Software, to develop the new ANSYS Enterprise Cloud solution. This solution makes it easy for customers to use the same work flows on-premise and on the Cloud. In addition, the Company strengthened its other cloud-hosting service partnerships by further improving best practices for executing engineering simulation in the Cloud.

The Company's Enhanced Solution Partner Program actively encourages specialized developers of software solutions to use the Company's technology as a development platform for their applications and provides customers with enhanced functionality related to their use of the Company's software. With over 100 active enhanced solution partnerships, spanning a wide range of technologies, including optimization, electronics, mechanical simulation, fluid simulation and CAD, this partner ecosystem extends the depth and breadth of the Company's technology offerings.

The Company has a software license agreement with Livermore Software Technology Corporation ("LSTC") whereby LSTC has provided LS-DYNA® software for explicit dynamics solutions used in applications such as crash test simulations in automotive and other industries. Under this arrangement, LSTC assists in the integration of the LS-DYNA software with the Company's pre- and post-processing capabilities and provides updates and problem resolution in return for royalties from sales of the ANSYS LS-DYNA® combined product.

The Company has a software license agreement with HBM that provides the advanced fatigue capabilities of nCode DesignLife™, a leading durability software from HBM. ANSYS nCode DesignLife™ technology leverages the open architecture of the ANSYS platform and enables mechanical engineers to more easily address complex product life and durability issues before a prototype is built.

The Company has a software license agreement with NICE that targets the emerging paradigm of data-center-based deployment of simulation. EnginFrame from NICE is bundled with ANSYS EKM and facilitates running interactive ANSYS applications on remote data centers.

COMPETITION

The Company believes that the principal factors affecting sales of its software include ease of use, breadth and depth of functionality, flexibility, quality, ease of integration with other software systems, file compatibility across computer platforms, range of supported computer platforms, performance, price and total cost of ownership, customer service and support, company reputation and financial viability, and effectiveness of sales and marketing efforts.

The Company continues to experience competition across all markets for its products and services. Some of the Company's current and possible future competitors have greater financial, technical, marketing and other resources than the Company, and some have well-established relationships with current and potential customers of the Company. The Company's current and possible future competitors also include firms that have or may in the future elect to compete by means of open source licensing. These competitive pressures may result in decreased sales volumes, price reductions and/or increased operating costs, and could result in lower revenues, margins and net income.

PROPRIETARY RIGHTS AND LICENSES

The Company regards its software as proprietary and relies on a combination of trade secret, copyright, patent and trademark laws, license agreements, nondisclosure and other contractual provisions, and technical measures to protect its proprietary rights in its products. The Company distributes its software products under software license agreements that grant customers nonexclusive licenses, which are typically nontransferable, for the use of the Company's products. License agreements for the Company's products are directly between the Company and end users. Use of the licensed software product is restricted to specified sites unless the customer obtains a multi-site license for its use of the software product. Software security measures are also employed to prevent unauthorized use of the Company's software products and the licensed software is subject to terms and conditions prohibiting unauthorized reproduction. Customers may purchase a perpetual license of the technology with the right to annually purchase ongoing maintenance, technical support and upgrades, or may lease the product on a fixed-term basis for a fee that includes the license, maintenance, technical support and upgrades.

The Company licenses its software products utilizing a combination of web-based and hard-copy license terms and forms. For certain software products, the Company primarily relies on "click-wrapped" licenses. The enforceability of these types of agreements under the laws of some jurisdictions is uncertain.

The Company also seeks to protect the source code of its software as a trade secret and as unpublished copyrighted work. The Company has obtained federal trademark registration protection for ANSYS and other marks in the U.S. and foreign countries. Additionally, the Company was awarded numerous patents by the U.S. Patent and Trademark Office, and has a number of

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patent applications pending. To the extent the Company does not choose to seek patent protection for its intellectual property, the Company primarily relies on the protection of its source code as a trade secret.

Employees of the Company have signed agreements under which they have agreed not to disclose trade secrets or confidential information. These agreements, where legally permitted, restrict engagement in or connection with any business that is competitive with the Company anywhere in the world while employed by the Company (and, in some cases, for specified periods thereafter) and state that any products or technology created by employees during their term of employment are the property of the Company. In addition, the Company requires all channel partners to enter into agreements not to disclose the Company's trade secrets and other proprietary information.

Despite these precautions, there can be no assurance that misappropriation of the Company's technology and proprietary information (including source code) will be prevented. Further, there can be no assurance that copyright, trademark, patent and trade secret protection will be available for the Company's products in certain jurisdictions, or that restrictions on the ability of employees and channel partners to engage in activities competitive with the Company will be enforceable. Costly and time-consuming litigation could be necessary in the future to enforce the Company's rights to its trade secrets and proprietary information or to enforce its patent rights and copyrights, and it is possible that, in the future, the Company's competitors may be able to obtain the Company's trade secrets or to independently develop similar, unpatented technology.

The software development industry is characterized by rapid technological change. Therefore, the Company believes that factors such as the technological and creative skills of its personnel, new product developments, frequent product enhancements, name recognition and reliable product maintenance are also important to establishing and maintaining technology leadership in addition to the various legal protections of its technology that may be available.

The Company does not believe that any of its products infringe upon the proprietary rights of third parties. There can be no assurance, however, that third parties will not claim such infringement by the Company or its licensors or licensees with respect to current or future products. The Company expects that software suppliers will increasingly be subject to the risk of such claims as the number of products and suppliers continues to expand and the functionality of products continues to increase. Any such claims, with or without merit, could be time consuming, result in costly litigation, cause product release delays or require the Company to enter into royalty or licensing agreements. Such royalty or licensing agreements, if required, may not be available on terms acceptable to the Company.

SEASONAL VARIATIONS

The Company's business has experienced seasonality, including quarterly reductions in software sales resulting from slowdowns of customer activities during the summer months, particularly in Europe, as well as from the seasonal purchasing and budgeting patterns of the Company's global customers. The Company's revenue is typically highest in the fourth quarter.

DEFERRED REVENUE AND BACKLOG

Deferred revenue consists of billings made or payments received in advance of revenue recognition from software license and maintenance agreements. The deferred revenue on the Company's consolidated balance sheets does not represent the total value of annual or multi-year, noncancellable software license and maintenance agreements. The Company's backlog represents installment billings for periods beyond the current quarterly billing cycle and customer orders received but not processed. The Company's deferred revenue and backlog as of December 31, 2016 and 2015 consisted of the following:

	Balance at December 31, 2016		
(in thousands)	Total	Current	Long-Term
Deferred revenue	$415,846	$403,279	$ 12,567
Backlog	221,994	64,361	157,633
Total	$637,840	$467,640	$ 170,200

	Balance at December 31, 2015		
(in thousands)	Total	Current	Long-Term
Deferred revenue	$379,740	$364,644	$ 15,096
Backlog	124,290	47,015	77,275
Total	$504,030	$411,659	$ 92,371

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Revenue associated with deferred revenue and backlog that will be recognized in the subsequent twelve months is classified as current in the table above.

EMPLOYEES

As of December 31, 2016, the Company employed approximately 2,800 people. At that date, there were also contract personnel and co-op students providing ongoing development services and technical support. Certain employees of the Company are subject to collective bargaining agreements and have local work councils.

ACQUISITIONS

The Company makes targeted acquisitions in order to support its long-term strategic direction, accelerate innovation, provide increased capabilities to its existing products, supply new products and services, expand its customer base and enhance its distribution channels.

During the twelve months ended December 31, 2016 and 2015, the Company completed various acquisitions to accelerate the development of new and innovative products to the marketplace while lowering design and engineering costs for customers. The acquisitions were not individually significant. The combined purchase prices of the acquisitions were approximately $10.3 million and $49.7 million for the years ended December 31, 2016 and 2015, respectively.

During the year ended December 31, 2014, the combined purchase price for acquisitions was $104.0 million. These acquisitions are further described in the table below:

Date of Closing	Company	Details
April 30, 2014	SpaceClaim Corporation	SpaceClaim Corporation ("SpaceClaim"), a leading provider of 3-D modeling technology, was acquired for $85.0 million. SpaceClaim's software provides customers with a powerful and intuitive 3-D direct modeling solution to author new concepts and then leverage the power of simulation to rapidly iterate on these designs to drive innovation.
January 3, 2014	Reaction Design	Reaction Design, a leading developer of chemistry simulation software, was acquired for $19.1 million. Reaction Design's solutions enable transportation manufacturers and energy companies to rapidly achieve their clean technology goals by automating the analysis of chemical processes via computer simulation and modeling solutions.

For further information on the Company's business combinations, see Note 3 to the consolidated financial statements included in Part IV, Item 15 of this Annual Report on Form 10-K.

AVAILABLE INFORMATION

The Company's website is www.ansys.com. The Company also maintains a presence on social media through its blog at www.ansys-blog.com, Facebook page at www.facebook.com/ANSYSInc, Twitter account at twitter.com/ANSYS, YouTube account at www.youtube.com/user/ansysinc and LinkedIn page at www.linkedin.com/company/ansys-inc. The Company makes available on its website, free of charge, Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, interactive data files, Current Reports on Form 8-K, reports filed pursuant to Section 16 and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after such materials are electronically filed or furnished to the Securities and Exchange Commission ("SEC"). The Company's reports may also be obtained by accessing the EDGAR database of the SEC's website at www.sec.gov. In addition, the Company has posted the charters for its Audit Committee, Compensation Committee, and Nominating and Corporate Governance Committee, as well as the Company's Code of Business Conduct and Ethics, Standard Business Practices and Corporate Governance Guidelines on its website. Information posted on the Company's website or social media accounts is not incorporated by reference in this Annual Report on Form 10-K.

ITEM 1A. RISK FACTORS

Information provided by the Company or its spokespersons, including information contained in this Annual Report on Form 10-K, may from time to time contain forward-looking statements concerning projected financial performance, market and industry sector growth, product development and commercialization or other aspects of future operations. Such statements will be based on the assumptions and expectations of the Company's management at the time such

statements are made. The Company cautions investors that its performance (and, therefore, any forward-looking statement) is subject to risks and uncertainties. Various important factors, including, but not limited to, the following may cause the Company's future results to differ materially from those projected in any forward-looking statement.

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Global Economic Conditions. The Company's operations and performance depend significantly on foreign and domestic economic conditions. Uncertainty in the macroeconomic environment, as well as geopolitical conditions, have resulted in significant volatility in credit, equity and foreign currency markets. This volatility and the related economic conditions may negatively impact the Company as customers defer spending in response to tighter credit, higher unemployment, financial market volatility, government austerity programs, negative financial news, declining valuations of investments and other factors. In addition, certain of the Company's customers' budgets may be constrained and they may be unable to purchase the Company's products at the same level as they have in prior periods. Customer spending levels may be impacted by decreased government spending in certain countries as concerns continue regarding economic conditions and government debt levels. These conditions may persist or further deteriorate for an extended period of time. As the global economy continues to experience volatility, the Company may be exposed to impairments of certain assets as their values deteriorate.

Tighter credit due to economic conditions may diminish the Company's future borrowing ability. The Company's customers' ability to pay for the Company's products and services may also be impaired, which may lead to an increase in the Company's allowance for doubtful accounts and write-offs of accounts receivable. Since the Company is exposed to the majority of major world markets, uncertainty in any significant market may negatively impact the Company's performance and results, particularly with respect to the Company's largest geographic customer bases. The Company is unable to predict the likely duration and severity of changing economic conditions or the likelihood of additional uncertainty arising in any of the Company's key markets. Should these economic conditions result in the Company not meeting its revenue growth objectives, the Company's operating results, cash flows and financial condition could be adversely affected.

Decline in Customers' Businesses. The Company's sales are based significantly on end-user demand for products in key industrial sectors. Many of these sectors periodically experience economic declines, which may be exacerbated by other economic factors. These factors may also adversely affect the Company's business by extending sales cycles and reducing revenue. These economic factors may cause the Company's customers to reduce the size of their workforce or cut back on operations and may lead to a reduction in renewals of licenses or maintenance contracts with the Company. The Company's customers may request discounts or extended payment terms on new products or seek to extend payment terms on existing contracts, all of which may cause fluctuations in the Company's future operating results. The Company may not be able to adjust its operating expenses to offset such fluctuations because a substantial portion of the Company's operating expenses is related to personnel, facilities and marketing programs. The level of personnel and related expenses may not be able to be adjusted quickly and is based, in significant part, on the Company's expectation for future revenue.

Risks Associated with International Activities. A majority of the Company's business comes from outside the United States and the Company has customers that supply a wide spectrum of goods and services in virtually all of the world's major economic regions. As the Company continues to expand its sales presence in international regions, the portion of its revenue, expenses, cash, accounts receivable and payment obligations denominated in foreign currencies continues to increase. If any of the foreign economies in which the Company does business deteriorate or suffer periods of uncertainty, the Company's business and performance may be negatively impacted through reduced customer spending, changes in purchasing cycles or timing, reduced access to credit for its customers, or other factors impacting the Company's international sales and collections. The Company's results may also be negatively impacted by geopolitical tensions, which may result in increased economic volatility.

As a result of its increasing international activities, the Company has revenue, expenses, cash, accounts receivable and payment obligations denominated in foreign currencies. As a result, the Company is subject to currency exchange risk. The Company's revenues and operating results are adversely affected when the U.S. Dollar strengthens relative to other currencies and are positively affected when the U.S. Dollar weakens. As a result, changes in currency exchange rates will affect the Company's financial position, results of operations and cash flows. In the event that there are economic declines in countries in which the Company conducts transactions, the resulting changes in currency exchange rates may affect the Company's financial position, results of operations and cash flows. The Company is most impacted by movements in and among the Japanese Yen, Euro, British Pound, South Korean Won, Indian Rupee, Canadian Dollar and U.S. Dollar. The Company seeks to reduce currency exchange transaction risks primarily

through its normal operating and treasury activities, but there can be no assurance that it will be successful in reducing these risks.

In June 2016, the United Kingdom voted to leave the European Union. The long-term impact of the decision is uncertain. As a result, the Company's business in the United Kingdom and Europe could be adversely impacted due to political and economic instability, fluctuations in currency exchange rates, changes in laws and regulations, and other factors. These risks could negatively impact the Company's financial position, results of operations and cash flows.

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In May 2018, a new set of data protection rules will go into effect in the European Union. These rules provide a unified and comprehensive set of requirements for data protection of individuals within the European Union. The Company will be subject to these requirements, which include potentially significant monetary penalties for noncompliance. If the Company fails to comply with the new regulations, its reputation may suffer and its financial position, results of operations and cash flows may be negatively impacted.

Additional risks inherent in the Company's international business activities include imposition of government controls; export license requirements; restrictions on the export of critical technology, products and services; the violation of anti-corruption laws and regulations, which are applicable to the Company, by third parties in countries where such conduct may be permissible or commonplace; political and economic instability; trade restrictions; changes in tariffs and taxes; difficulties in staffing and managing international operations; changes in data privacy regulations; longer accounts receivable payment cycles; and the burdens of complying with a wide variety of foreign laws and regulations. Effective patent, copyright, trademark and trade secret protection may not be available in every foreign country in which the Company sells its products and services. The Company's business, financial position, results of operations and cash flows could be materially, adversely affected by any of these risks.

Sales Forecasts. The Company makes many operational and strategic decisions based upon short- and long-term sales forecasts. The Company's sales personnel continually monitor the status of all proposals, including the estimated closing date and the value of the sale, in order to forecast quarterly sales. These forecasts are subject to significant estimation and are impacted by many external factors, including global economic conditions and the performance of the Company's customers. A variation in actual sales activity from that forecasted could cause the Company to plan or budget incorrectly and, therefore, could adversely affect the Company's business, financial position, results of operations and cash flows. The Company's management team forecasts macroeconomic trends and developments, and integrates them through long-range planning into budgets, research and development strategies and a wide variety of general management duties. Global economic conditions, and the effect those conditions and other disruptions in global markets have on the Company's customers, may have a significant impact on the accuracy of the Company's sales forecasts. These conditions may increase the likelihood or the magnitude of variations between actual sales activity and the Company's sales forecasts and, as a result, the Company's performance may be hindered because of a failure to properly match corporate strategy with economic conditions. This, in turn, may adversely affect the Company's business, financial position, results of operations and cash flows.

Stock Market and Stock Price Volatility. Market prices for securities of software companies have generally been volatile. In particular, the market price of the Company's common stock has been, and may continue to be, subject to significant fluctuations as a result of factors affecting the Company, the software industry or the securities markets in general. Such factors include, but are not limited to, declines in trading price that may be triggered by the Company's failure to meet the expectations of securities analysts and investors. Moreover, the trading price could be subject to additional fluctuations in response to quarter-to-quarter variations in the Company's operating results, material announcements made by the Company or its competitors, conditions in the financial markets or the software industry generally, or other events and factors, many of which are beyond the Company's control.

Rapidly Changing Technology; New Products; Risk of Product Errors. The Company operates in an industry generally characterized by rapidly changing technology and frequent new product introductions, which can render existing products obsolete or unmarketable. A major factor in the Company's future success will be its ability to anticipate technological changes and to develop and introduce, in a timely manner, enhancements to its existing products, products acquired in acquisitions and new products to meet those changes. If the Company is unable to introduce new products and to respond quickly to industry changes, its business, financial position, results of operations and cash flows could be materially, adversely affected.

The introduction and marketing of new or enhanced products require the Company to manage the transition from existing products in order to minimize disruption in customer purchasing patterns. There can be no assurance that the Company will be successful in developing and marketing, on a timely basis, new products or product enhancements, that the new products will adequately address the changing needs of the marketplace or that the Company will successfully manage the transition from existing products. Software products as complex as those offered by the Company may contain undetected errors when first introduced, or as new versions are released, and the likelihood of

errors is increased as a result of the Company's commitment to the frequency of its product releases. There can be no assurance that errors will not be found in any new or enhanced products after the commencement of commercial shipments. Certain products require a higher level of sales and support expertise. Failure of the Company's sales channel, particularly the indirect channel, to obtain this expertise and to sell the new product offerings effectively could have an adverse impact on the Company's sales in future periods. Any of these problems may result in the loss of or delay in customer acceptance, diversion of development resources, damage to the Company's reputation, or increased service and warranty costs, any of which could have a material adverse effect on the Company's business, financial position, results of operations and cash flows.

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Product Quality. The Company has separate quality systems and registrations under the ISO 9001:2008 standard, in addition to other governmental and industrial regulations. The Company's continued compliance with quality standards and favorable outcomes in periodic examinations is important to retain current customers and vital to procure new sales. If the Company was determined not to be compliant with various regulatory or ISO 9001/9000 standards, its certificates of registration could be suspended, requiring remedial action and a time-consuming re-registration process. Product quality issues or failures could result in the Company's reputation becoming diminished, resulting in a material adverse impact on revenue, operating margins, net income, financial position and cash flows.

Competition. The Company continues to experience competition across all markets for its products and services. Some of the Company's current and possible future competitors have greater financial, technical, marketing and other resources than the Company, and some have well-established relationships with current and potential customers of the Company. The Company's current and possible future competitors also include firms that have competed or may in the future elect to compete by means of open source licensing. Parties among the Company's current or future strategic alliances may diminish or sever technical, software development and marketing relationships with the Company for competitive purposes. These competitive pressures may result in decreased sales volumes, price reductions and/or increased operating costs, and could result in lower revenues, margins and net income.

Changes in the Company's Pricing Models. The intense competition the Company faces in the sales of its products and services, and general economic and business conditions, can put pressure on the Company to adjust its prices. If the Company's competitors offer deep discounts on certain products or services, or develop products that the marketplace considers more valuable, the Company may need to lower prices or offer discounts or other favorable terms in order to compete successfully. Any such changes may reduce operating margins and could adversely affect operating results. The Company's maintenance products, which include software license updates and product support fees, are generally priced as a percentage of its new software license fees. The Company's competitors may offer lower percentage pricing on product updates and support that could put pressure on the Company to further discount its new license or product support prices.

Any broad-based change to the Company's prices and pricing policies could cause new software license and service revenues to decline or be delayed as its sales force implements and its customers adjust to the new pricing policies. Some of the Company's competitors may bundle software products for promotional purposes or as a long-term pricing strategy or provide guarantees of prices, product implementations or wider geographical license usage provisions. These practices could, over time, significantly constrain the prices that the Company can charge for certain products. If the Company does not adapt its pricing models to reflect changes in customer use of its products or changes in customer demand, the Company's new software license revenues could decrease. Additionally, increased distribution of applications through application service providers, including software-as-a-service providers, may reduce the average price for the Company's products or adversely affect other sales of the Company's products, reducing new software license revenues unless the Company can offset price reductions with volume increases. The increase in open source software distribution may also cause the Company to adjust its pricing models.

Dependence on Senior Management and Key Technical Personnel. The Company's success depends upon the continued services of the Company's senior executives, key technical employees and other employees. Each of the Company's executive officers, key technical personnel and other employees could terminate his or her relationship with the Company at any time. The loss of any of the Company's senior executives might significantly delay or prevent the achievement of the Company's business objectives and could materially harm the Company's business and customer relationships.

In addition, because of the highly technical nature of the Company's products, the Company must attract and retain highly skilled engineering and development personnel, many of whom are recruited from outside of the United States. The market for this talent is highly competitive. The Company is limited in its ability to recruit internationally by restrictive domestic immigration laws. If the immigration laws become stricter or if the Company has less success in recruiting and retaining key personnel, the Company's business, reputation and operating results could be materially and adversely affected.

Dependence on Proprietary Technology. The Company's success is highly dependent upon its proprietary technology. The Company generally relies on contracts and the laws of copyrights, patents, trademarks and trade secrets to protect its technology. The Company maintains a trade secrets program, enters into confidentiality agreements with its employees and channel partners, and limits access to and distribution of its software, documentation and other proprietary information. There can be no assurance that the steps taken by the Company to protect its proprietary technology will be adequate to prevent misappropriation of its technology by third parties, or that third parties will not be able to develop similar technology independently. Costly and time-consuming litigation could be necessary to enforce and determine the scope of trade secret rights and related confidentiality and nondisclosure provisions. Although the Company is not aware that any of its technology infringes upon the rights of third parties, there can be no assurance that other parties will not assert technology infringement claims against the Company or that, if asserted, such claims will not prevail.

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Risks Associated with Security of the Company's Products, Source Code and IT Systems. The Company makes significant efforts to maintain and improve the security and integrity of its products, source code, computer systems and data. Despite significant efforts to create security barriers to such programs, it is virtually impossible for the Company to entirely mitigate this risk. There appears to be an increasing number of computer “hackers” developing and deploying a variety of destructive software programs (such as viruses, worms and the like) that could attack the Company's products and computer systems. Because the techniques used to obtain unauthorized access to networks or to sabotage systems change frequently and generally are not recognized until launched against a target, the Company may be unable to anticipate these techniques or to implement adequate preventative measures. Like all software products, the Company's software is vulnerable to such attacks. The impact of such an attack could disrupt the proper functioning of the Company's software products, cause errors in the output of its customers' work, allow unauthorized access to sensitive, proprietary or confidential information of the Company or its customers and result in other destructive outcomes. If this were to occur, the Company's reputation may suffer, customers may stop buying products, the Company could face lawsuits and potential liability, and the Company's financial performance could be negatively impacted.

There is also a danger of industrial espionage, cyber-attacks, misuse, theft of information or assets (including source code), or damage to assets by people who have gained unauthorized access to the Company's facilities, systems or information. Such cybersecurity breaches, misuse or other disruptions could lead to the disclosure of portions of the Company's product source code or other confidential information, improper usage and distribution of the Company's products without compensation, illegal usage of the Company's products which could jeopardize the security of information stored in and transmitted through its computer systems, and theft, manipulation and destruction of private and proprietary data, resulting in defective products and production downtimes. Although the Company actively employs measures to combat unlicensed copying, access and use of software and intellectual property through a variety of techniques, preventing unauthorized use or infringement of the Company's rights is inherently difficult. These events could adversely affect the Company's financial results or could result in significant claims for damages against it. Participating in lawsuits to protect against any such unauthorized access to, usage of or disclosure of any of the Company's products or any portion of the Company's product source code, or in prosecutions in connection with any such cybersecurity breach, could be costly and time-consuming, and may divert management's attention and adversely affect the market's perception of the Company and its products.

Policing the unauthorized distribution and use of the Company's products is difficult, and software piracy (including online piracy) is a persistent problem. The proliferation of technology designed to circumvent typical software protection measures used in the Company's products, and the possibility of methods that circumvent the techniques it employs in its products, may lead to an expansion in piracy or misuse of its products and intellectual property. As a result, and despite the Company's efforts to prevent such activities and to prosecute instances of such activities, the Company may nonetheless lose significant revenue due to illegal use of its software, and management's attention may be diverted to address specific instances of piracy or misuse, or to address piracy and misuse in general.

A number of the Company's core processes, such as software development, sales and marketing, customer service and financial transactions, rely on its IT infrastructure and applications. The Company also relies upon third-party products, which are exposed to various security vulnerabilities. Malicious software, sabotage and other cybersecurity breaches of the types discussed above could cause an outage of the Company's infrastructure, which could lead to a substantial denial of service and ultimately to production downtime, recovery costs and customer claims. This could have a significant negative impact on the Company's business, financial position, profit and cash flows.

The Company has implemented a number of measures designed to ensure the security of its information, IT resources and other assets. Nonetheless, unauthorized users could gain access to its systems through cyber-attacks and steal, use without authorization, and sabotage the Company's intellectual property and confidential data. Any breach of its IT security, misuse or theft could lead to loss of production, recovery costs or litigation brought by employees, customers or business partners, which could have a significant negative impact on the Company's business, financial position, profit, cash flows and reputation.

Implementation of IT Systems. The Company is currently implementing a new Customer Relationship Management (CRM) system and moving the billing and revenue recognition processes from the Company’s existing ERP

accounting system to an application of the new CRM system. While these systems, along with the re-design of the processes described above, are anticipated to simplify the sales and order processing efforts and to enhance customer service and aid in the application of the new revenue accounting standard, there is a risk that the project will not achieve the anticipated benefits or that the benefits will not be achieved as quickly as anticipated. The project implementation timeline and scope may change and become longer and broader as new facets of the design and implementation efforts are undertaken. This may take the attention of key operational management away from other aspects of the business, including the integration of acquisitions, and also result in increased consulting and software costs. These factors may have a significant negative impact on the Company's business, financial position, profit, cash flows and reputation.

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Dependence on Channel Partners. The Company continues to distribute a meaningful portion of its products through its global network of independent, regional channel partners. The channel partners sell the Company's software products to new and existing customers, expand installations within the existing customer base, offer consulting services and provide the first line of technical support. Consequently, in certain geographies, the Company is highly dependent upon the efforts of the channel partners. Difficulties in ongoing relationships with channel partners, such as failure to meet performance criteria or to promote the Company's products as aggressively as the Company expects, and differences in the handling of customer relationships, could adversely affect the Company's performance. Additionally, the loss of any major channel partner for any reason, including a channel partner's decision to sell competing products rather than the Company's products, could have a material adverse effect on the Company. Moreover, the Company's future success will depend substantially on the ability and willingness of its channel partners to continue to dedicate the resources necessary to promote the Company's portfolio of products and to support a larger installed base of the Company's products. If the channel partners are unable or unwilling to do so, the Company may be unable to sustain revenue growth.

The Company has been increasing its number of channel partners, particularly in international locations. The business relationships with these channel partners are recently established and could result in additional compliance burdens for the Company. These partners also have a less-established payment history with the Company and revenue from these partners could come with a higher rate of bad debt expense.

During times of significant fluctuations in world currencies, certain channel partners may have solvency issues to the extent that effective hedge transactions are not employed or there is not sufficient working capital. In particular, if the U.S. Dollar strengthens relative to other currencies, certain channel partners who pay the Company in U.S. Dollars may have trouble paying the Company on time or may have trouble distributing the Company's products due to the impact of the currency exchange fluctuation on such channel partner's cash flows. This may impact the Company's ability to distribute its products into certain regions and markets, and may have an adverse effect on the Company's results of operations and cash flows.

Reliance on Perpetual Licenses. Although the Company has historically maintained stable recurring revenue from the sale of software lease licenses and software maintenance subscriptions, it also has relied on sales of perpetual licenses that involve the payment of a single, up-front fee. Historically, these licenses have been more typical in the computer software industry and remain as the preferred licensing approach in certain markets. While revenue generated from software lease licenses and software maintenance subscriptions currently represents a portion of the Company's revenue, to the extent that perpetual license revenue continues to represent a significant percentage of total revenue, the Company's revenue in any period will depend significantly on sales completed during that period. If customer purchasing patterns shift toward a stronger preference for lease licenses and fewer perpetual licenses, as the Company has recently experienced, there could be a short-term, adverse impact on the Company's revenue and profitability.

Renewal Rates for Annual Lease and Maintenance Contracts. A substantial portion of the Company's license and maintenance revenue is derived from annual lease and maintenance contracts. These contracts are generally renewed on an annual basis and typically have a high rate of customer renewal. In addition to the recurring revenue base associated with these contracts, a majority of customers purchasing new perpetual licenses also purchase related annual maintenance contracts. If the rate of renewal for these contracts is adversely affected by economic or other factors, the Company's license and maintenance growth will be adversely affected over the term that the revenue for those contracts would have otherwise been recognized. As a result, the Company's business, financial position, results of operations and cash flows may also be adversely impacted during those periods.

Risks Associated with Acquisitions. Historically, the Company has consummated acquisitions in order to support the Company's long-term strategic direction, accelerate innovation, provide increased capabilities to existing products, supply new products and services, expand its customer base and enhance its distribution channels. The Company has completed a number of acquisitions in recent years and expects to make additional acquisitions in the future, but may not be able to identify suitable acquisition candidates or, if suitable candidates are identified, the Company may not be able to complete the business combination on commercially acceptable terms. The process of exploring and pursuing acquisition opportunities may result in devotion of significant management and financial resources.

Even if the Company is able to consummate acquisitions that it believes will be successful, such transactions present many risks including, among others, difficulty in integrating the management teams, strategies, cultures and operations of the companies; failing to achieve anticipated synergies and revenue increases; difficulty incorporating and integrating the acquired technologies or products with the Company's existing product lines; difficulty in coordinating, establishing or expanding sales, distribution and marketing functions, as necessary; difficulty in training the global sales team to sell the acquired products; failure to develop new products and services that utilize the technologies and resources of the companies; disruption of the Company's ongoing business and diversion of management's attention to transition or integration issues; unanticipated and unknown liabilities; the loss of key employees, customers, partners and channel partners of the Company or of the acquired

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company, resulting in the loss of key information, expertise or know-how, and unanticipated additional recruitment and training costs; and difficulties implementing and maintaining sufficient controls, policies and procedures over the systems, products and processes of the acquired company. If the Company does not achieve the anticipated benefits of its acquisitions as rapidly or to the extent anticipated by the Company's management and financial or industry analysts, there could be a material adverse effect on the Company's stock price, business, financial position, results of operations and cash flows.

In addition, for companies acquired, limited experience will exist for several quarters following the acquisition relating to how the acquired company's sales pipelines will convert into sales or revenues, and the conversion rate post-acquisition may be quite different than the historical conversion rate. Because a substantial portion of the Company's sales are completed in the latter part of a quarter, and its cost structure is largely fixed in the short-term, revenue shortfalls may have a negative impact on the Company's profitability. A delay in a small number of large, new software license transactions could cause the Company's quarterly software license revenues to fall significantly short of its predictions.

The Company may periodically be involved in business combinations with enterprises that are developmental in nature. While these entities have leading-edge technology, they may not have developed direct or indirect distribution channels and may not have software revenues which cover the ongoing expenses. Therefore, the Company may have a decrease in operating margin and profitability while these types of acquisitions are integrated and the distribution channel incorporates the new product offerings.

Disruption of Operations or Infrastructure Failures. A significant portion of the Company's software development personnel, source code and computer equipment is located at operating facilities in the United States, Canada, India, Japan and throughout Europe. The occurrence of a natural disaster or other unforeseen catastrophe at any of these facilities could cause interruptions in the Company's operations, services and product development activities. Additionally, if the Company experiences problems that impair its business infrastructure, such as a computer virus, telephone system failure or an intentional disruption of its information technology systems by a third party, these interruptions could have a material adverse effect on the Company's business, financial position, results of operations, cash flows and the ability to meet financial reporting deadlines. Further, because the Company's sales are not generally linear during any quarterly period, the potential adverse effects resulting from any of the events described above or any other disruption of the Company's business could be accentuated if it occurs close to the end of a fiscal quarter.

Risks Associated with Significant Sales to Existing Customers. A significant portion of the Company's sales includes follow-on sales to existing customers that invest in the Company's broad suite of engineering simulation software and services. If a significant number of current customers were to become dissatisfied with the Company's products and services, or choose to license or utilize competitive offerings, the Company's follow-on sales, and recurring lease and maintenance revenues, could be materially, adversely impacted, resulting in reduced revenue, operating margins, net income and cash flows.

Industry Consolidation. Consolidation in industries that utilize the Company’s software may result in combined workforces
where economies of scale and synergies are achieved, and fewer ANSYS software licenses are required. Consolidation may
also result in the newly combined/surviving entity wanting the most favorable pricing from the former contracts and expecting
larger volume discounts on future purchases. If a customer is acquired by an entity that does not utilize ANSYS in favor of a competing product, the Company may not have future orders from the enterprise. Further, consolidation of the Company's competitors may result in synergies that allow those competitors to benefit from broader sales channels and increased access to capital. Any of these impacts could adversely affect the Company's business, financial position, results of operations and cash flows.

Periodic Reorganization of Sales Force. The Company relies heavily on its direct sales force. From time to time, the Company reorganizes and makes adjustments to its sales leadership and/or its sales force in response to such factors as management changes, performance issues, market opportunities and other considerations. These changes may result in

a temporary lack of sales production and may adversely impact revenue in future quarters. There can be no assurance that the Company will not restructure its sales force in future periods or that the transition issues associated with such a restructuring will not occur.

Income Tax Estimates. The Company makes significant estimates in determining its worldwide income tax provision. These estimates involve complex tax regulations in a number of jurisdictions across the Company's global operations and are subject to many transactions and calculations in which the ultimate tax outcome is uncertain. The final outcome of tax matters could be different than the estimates reflected in the historical income tax provision and related accruals. Such differences could have a material impact on income tax expense and net income in the periods in which such determinations are made.

The amount of income tax paid by the Company is subject to ongoing audits by federal, state and foreign tax authorities. These audits can result in additional assessments, including interest and penalties. The Company's estimate for liabilities associated with uncertain tax positions is highly judgmental and actual future outcomes may result in favorable or unfavorable adjustments to the Company's estimated tax liabilities, including estimates for uncertain tax positions, in the period the

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assessments are made or resolved, audits are closed or when statutes of limitation on potential assessments expire. As a result, the Company's effective tax rate may fluctuate significantly on a quarterly or annual basis.
The Company allocates a portion of its purchase price to goodwill and intangible assets. Impairment charges associated with goodwill are generally not tax-deductible and will result in an increased effective income tax rate in the period the impairment is recorded. The Company has recorded significant deferred tax liabilities related to acquired intangible assets that are not deductible for tax purposes. These deferred tax liabilities are based on future statutory tax rates in the locations in which the intangible assets are recorded. Any future changes in statutory tax rates would be recorded as an adjustment to the deferred tax liabilities in the period the change is announced, and could have a material impact on the Company's effective tax rate during that period.
Regulatory Compliance. Like all other public companies, the Company is subject to the rules and regulations of the SEC, including those that require the Company to report on and receive an attestation from its independent registered public accounting firm regarding the Company's internal control over financial reporting. Compliance with these requirements causes the Company to incur additional expenses and causes management to divert time from the day-to-day operations of the Company. While the Company anticipates being able to fully comply with these requirements, if it is not able to comply with the reporting or attestation requirements relating to internal control over financial reporting, the Company may be subject to sanctions by the SEC or NASDAQ. Such sanctions could divert the attention of the Company's management from implementing its business plan and could have an adverse effect on the Company's business and results of operations.
As the Company's stock is listed on the NASDAQ Global Select Market, the Company is subject to the ongoing financial and corporate governance requirements of NASDAQ. While the Company anticipates being able to fully comply with these requirements, if it is not able to comply, the Company's name may be published on NASDAQ's daily Non-Compliant Companies list until NASDAQ determines that it has regained compliance or the Company no longer trades on NASDAQ. If the Company were unable to return to compliance with the governance requirements of NASDAQ, the Company may be delisted from the NASDAQ Global Select Market, which could have an adverse effect on the market value of the Company's equity securities and the ability to raise additional capital.
Governmental Revenue Sources. The Company's sales to the United States government must comply with Federal Acquisition Regulations. Failure to comply with these regulations could result in penalties being assessed against the Company or an order preventing the Company from making future sales to the United States government. Further, the Company's international activities must comply with the export control laws of the United States and other countries, the Foreign Corrupt Practices Act, the United Kingdom Bribery Act of 2010 and a variety of other laws and regulations of the United States and other countries in which the Company operates. Failure to comply with any of these laws and regulations could adversely affect the Company's business, financial position, results of operations and cash flows.
In certain circumstances, the United States government, state and local governments and their respective agencies, and certain foreign governments may have the right to terminate contractual arrangements at any time, without cause. The United States, European Union and certain other government contracts, as well as the Company's state and local level contracts, are subject to the approval of appropriations or funding authorizations. Certain of these contracts permit the imposition of various civil and criminal penalties and administrative sanctions, including, but not limited to, termination of contracts, refund of a portion of fees received, forfeiture of profits, suspension of payments, fines and suspensions or debarment from future government business, any of which could have an adverse effect on the Company's results of operations and cash flows.
Contingencies. The Company is subject to various investigations, claims and legal proceedings that arise in the ordinary course of business, including commercial disputes, labor and employment matters, tax audits, alleged infringement of intellectual property rights and other matters. Each of these matters is subject to various uncertainties, and it is possible that an unfavorable resolution of one or more of these matters could materially affect the Company's results of operations, cash flows and financial position.
Changes in Existing Financial Accounting Standards. Changes in existing accounting rules or practices, new accounting pronouncements, or varying interpretations of current accounting pronouncements could have a significant adverse effect on the Company's results of operations or the manner in which the Company conducts its business.

In addition, the Company could incur significant costs for changes to its business systems, processes and internal controls as a result of the transition. These costs could have a significant adverse impact on the Company's results of operations and cash flows. The transition could also cause management to divert time from the day-to-day operations of the Company, which could impact the Company's business. If the Company is unable to successfully transition its business systems, processes and internal controls before the guidance effective date, it could impact the ability to meet financial reporting deadlines. For further information on the impact of recently issued accounting guidance on the Company, see Note 2 to the consolidated financial statements included in Part IV, Item 15 of this Annual Report on Form 10-K.

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Of particular importance to the Company's business, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers (Topic 606), effective for annual periods beginning after December 15, 2017, which supersedes most current revenue recognition guidance, including industry-specific guidance. This update is expected to affect the timing and amounts of revenue recognized, which could have an adverse impact on the Company's revenue and results of operations. The Company could also incur significant costs for implementing the new guidance, including costs to change internal controls, systems, processes and customer contracts. Efforts to implement the guidance by the effective date could divert management's attention from other aspects of the business, which could have a significant adverse impact on the Company's results of operations, cash flows and financial position.

Changes in Tax Law. The Company's operations are subject to income and transaction taxes in the United States and in multiple foreign jurisdictions. A change in the tax law in the jurisdictions in which the Company does business, including an increase in tax rates, an adverse change in the treatment of an item of income or expense, or a decrease in tax rates in a jurisdiction in which the Company has significant deferred tax assets, could result in a material increase in tax expense. Currently, a substantial portion of the Company's revenue is generated from customers located outside the United States, and a substantial portion of assets are located outside the United States. United States income taxes and foreign withholding taxes have not been provided on undistributed earnings for non-United States subsidiaries to the extent such earnings are considered to be indefinitely reinvested in the operations of those subsidiaries. Changes in existing taxation rules or practices, new taxation rules, or varying interpretations of current taxation practices could have a material adverse effect on the Company's results of operations or the manner in which the Company conducts its business.

The Company has significant operations in India. There have been court rulings concerning certain Indian tax laws that have been inconsistent with tax positions taken by the Company and inconsistent with the advice provided to the Company by its tax advisors.

An Indian subsidiary of the Company has several service tax audits pending that have resulted in formal inquiries being received on transactions through mid-2012. The Company could incur tax charges and related liabilities, including those related to the service tax audit case, of approximately $7 million. The service tax issues raised in the Company’s notices and inquiries are very similar to the case, M/s Microsoft Corporation (I) (P) Ltd. Vs Commissioner of Service Tax, New Delhi, wherein the Delhi Customs, Excise and Service Tax Appellate Tribunal (CESTAT) has passed a favorable ruling to Microsoft. The Company can provide no assurances on whether the Microsoft case’s favorable ruling will be challenged in higher courts or on the impact that the present Microsoft case’s decision will have on the Company’s cases. The Company is uncertain as to when these service tax matters will be concluded.

Other court cases are pending in India that could have a material impact on the Company's financial position, results of operations and cash flows if the ultimate outcome of those cases is similarly inconsistent with tax positions taken by the Company.

A French subsidiary of the Company received notice that the French taxing authority rejected the Company's 2012 research and development credit. The Company has contested the decision. However, if the Company does not receive a favorable outcome, it could incur charges of approximately $0.8 million. In addition, an unfavorable outcome could result in the authorities reviewing or rejecting $3.8 million of similar research and development credits for 2013 through the current year that are currently reflected as an asset. The Company can provide no assurances on the timing or outcome of this matter.

ITEM 1B. UNRESOLVED STAFF COMMENTS

The Company has received no written comments regarding our periodic or current reports from the staff of the SEC that were issued 180 days or more preceding the end of our fiscal year 2016 and that remain unresolved.

ITEM 2. PROPERTIES

The Company's executive offices and those related to certain domestic product development, marketing, production and administration are located in a 186,000 square foot office facility in Canonsburg, Pennsylvania. The lease for this facility was effective as of September 14, 2012. The term of the lease is 183 months, beginning on October 1, 2014.

The Company owns: a 65,000 square foot office facility in Lebanon, New Hampshire; a 62,000 square foot office building near its current Canonsburg headquarters; and a 59,000 square foot facility in Pune, India.

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The Company and its subsidiaries also lease office space in various locations throughout the world. The Company owns substantially all equipment used in its facilities. Management believes that, in most geographic locations, its facilities allow for sufficient space to support present and future foreseeable needs, including such expansion and growth as the business may require. In other geographic locations, the Company expects that it will be required to expand capacity beyond that which it currently owns or leases.

The Company's properties and equipment are in good operating condition and are adequate for the Company's current needs. The Company does not anticipate difficulty in renewing existing leases as they expire or in finding alternative facilities.

ITEM 3. LEGAL PROCEEDINGS

The Company is subject to various investigations, claims and legal proceedings that arise in the ordinary course of business, including commercial disputes, labor and employment matters, tax audits, alleged infringement of intellectual property rights and other matters. In the opinion of the Company, the resolution of pending matters is not expected to have a material adverse effect on the Company's consolidated results of operations, cash flows or financial position. However, each of these matters is subject to various uncertainties and it is possible that an unfavorable resolution of one or more of these proceedings could, in the future, materially affect the Company's results of operations, cash flows or financial position.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

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PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

The Company's common stock trades on the NASDAQ Global Select Market tier of the NASDAQ Stock Market under the symbol: "ANSS". The following table sets forth the low and high sale prices of the Company's common stock in each of the Company's last eight fiscal quarters:

	Fiscal Quarter Ended 2016		Fiscal Quarter Ended 2015	
	Low Sale Price	High Sale Price	Low Sale Price	High Sale Price
December 31	$ 82.28	$ 96.21	$ 85.33	$ 98.39
September 30	$ 88.30	$ 98.99	$ 84.90	$ 97.59
June 30	$ 81.41	$ 92.48	$ 84.09	$ 92.46
March 31	$ 80.51	$ 91.62	$ 78.76	$ 88.96

On February 14, 2017, there were 151 stockholders of record and 63,151 beneficial holders of the Company's common stock.

The Company has not paid cash dividends on its common stock as it has retained earnings primarily for acquisitions, for future business opportunities and to repurchase stock when authorized by the Board of Directors and when such repurchase meets the Company's objectives. The Company reviews its policy with respect to the payment of dividends from time to time; however, there can be no assurance that any dividends will be paid in the future.

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Performance Graph

Set forth below is a line graph comparing the yearly percentage change in the cumulative total stockholder return on the Company's common stock, based on the market price of the Company's common stock, with the total return of companies included within the Russell 1000 Index, the NASDAQ Composite Stock Market Index and an industry peer group of four companies (Autodesk, Inc., PTC Inc., Cadence Design Systems, Inc. and Synopsys, Inc.) selected by the Company pursuant to Item 201(e) of Regulation S-K, for the period commencing January 1, 2012 and ending December 31, 2016. The calculation of total cumulative returns assumes a $100 investment in the Company's common stock, the Russell 1000 Index, the NASDAQ Composite Stock Market Index and the peer group on January 1, 2012, and the reinvestment of all dividends, and accounts for all stock splits. The historical information set forth below is not necessarily indicative of future performance.

ASSUMES $100 INVESTED ON JANUARY 1, 2012
ASSUMES DIVIDENDS REINVESTED
FIVE FISCAL YEARS ENDING DECEMBER 31, 2016

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Equity Compensation Plan Information as of December 31, 2016

Plan Category	(a) Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	(b) Weighted Average Exercise Price of Outstanding Options, Warrants and Rights	(c) Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a))
Equity Compensation Plans Approved by Security Holders			
1996 Stock Option and Grant Plan	2,900,006	$ 58.54	10,134,170[3]
Ansoft Corporation 2006 Stock Incentive Plan	150,675	$ 35.77	—
Apache Design Solutions, Inc. 2001 Stock/Option Issuance Plan	71,229	$ 19.27	—
SpaceClaim Corporation 2005 Stock Incentive Plan	7,698	$ 23.75	—
Gear Design Solutions, Inc. Stock Incentive Plan	6,328	$ 12.26	—
1996 Employee Stock Purchase Plan	(1)	(2)	350,772
Equity Compensation Plans Not Approved by Security Holders			
None			
Total	3,135,936		10,484,942

(1) The number of shares issuable with respect to the current offering period is not determinable until the end of the period.

(2) The per share purchase price of shares issuable with respect to the current offering period is not determinable until the end of the period.

(3) The number of securities remaining available for future issuance assumes attainment of 100% for awards with a performance condition or a market condition.

Unregistered Sale of Equity Securities and Use of Proceeds

None.

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under Plans or Programs[1]
October 1 - October 31, 2016	—	$ —	—	2,300,000
November 1 - November 30, 2016	640,331	$ 92.62	640,331	1,659,669
December 1 - December 31, 2016	359,669	$ 93.80	359,669	1,300,000
Total	1,000,000	$ 93.05	1,000,000	1,300,000

[1] The Company initially announced its stock repurchase program in February 2000, and subsequently announced various amendments to the program. The most recent amendment to the program, authorizing the repurchase of up to 5,000,000 shares, was approved by the Company's Board of Directors in February 2017. There is no expiration date to this amendment.

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ITEM 6. SELECTED FINANCIAL DATA

The following table sets forth selected financial data as of and for the year ended December 31 for each of the last five years. This selected financial data should be read in conjunction with the consolidated financial statements and related notes included in Part IV, Item 15 of this Annual Report on Form 10-K.

	Year Ended December 31,				
(in thousands, except per share data)	2016	2015	2014	2013	2012
Total revenue	$988,465	$942,753	$936,021	$861,260	$798,018
Operating income	376,242	353,679	347,450	321,863	294,253
Net income	265,636	252,521	254,690	245,327	203,483
Earnings per share – basic	$3.05	$2.82	$2.77	$2.65	$2.20
Weighted average shares – basic	87,227	89,561	92,067	92,691	92,622
Earnings per share – diluted	$2.99	$2.76	$2.70	$2.58	$2.14
Weighted average shares – diluted	88,969	91,502	94,194	95,139	94,954
Total assets	$2,800,526	$2,729,904	$2,752,879	$2,702,097	$2,589,641
Working capital	630,301	592,280	617,240	601,183	414,043
Long-term liabilities	53,021	51,331	70,303	125,469	173,372
Stockholders' equity	2,208,405	2,194,427	2,217,501	2,136,246	1,940,291
Cash provided by operating activities	356,827	367,523	385,307	332,983	298,415

In the table above, the comparability of information among the years presented is impacted by the Company's acquisitions. The operating results of the Company's acquisitions have been included in the results of operations since their respective acquisition dates. For further information, see the “Acquisitions” section of Management's Discussion and Analysis of Financial Condition and Results of Operations in Item 7 and Note 3 to the consolidated financial statements included in Part IV, Item 15 of this Annual Report on Form 10-K.

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ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Overview

The Company's GAAP results for the year ended December 31, 2016 reflect growth in revenue of 4.8%, operating income of 6.4% and diluted earnings per share of 8.3% as compared to the year ended December 31, 2015. The Company experienced higher revenue in 2016 due to growth in lease license and maintenance revenue, partially offset by decreased perpetual license revenue. The Company also experienced increased operating expenses primarily due to increased personnel costs. Reductions in amortization expense partially offset these cost increases.

The Company's non-GAAP results for the year ended December 31, 2016 reflect growth in revenue of 4.7%, operating income of 3.6% and diluted earnings per share of 6.1% as compared to the year ended December 31, 2015. The non-GAAP results exclude the income statement effects of the acquisition accounting adjustment to deferred revenue, stock-based compensation, acquisition-related amortization of intangible assets, restructuring charges and transaction costs related to business combinations. For further disclosure regarding non-GAAP results, see the section titled “Non-GAAP Results” preceding the section titled “Liquidity and Capital Resources”.

The Company incurred $3.4 million in restructuring charges, or $2.4 million net of tax, during the year ended December 31, 2016. The Company expects to incur additional charges of $10 million - $15 million, or $7 million - $10 million net of tax, primarily during the first quarter of 2017. These charges are excluded from the Company's non-GAAP results.

The Company's comparative financial results were impacted by fluctuations in the U.S. Dollar during the year ended December 31, 2016 as compared to the year ended December 31, 2015. The impacts on the Company's revenue and operating income due to currency fluctuations are reflected in the table below.

The amounts in the table represent the difference between the actual 2016 results and the same results calculated at the 2015 exchange rates. Amounts in brackets indicate a net adverse impact from currency fluctuations.

	Twelve Months Ended December 31, 2016	
(in thousands)	GAAP	Non-GAAP
Revenue	$(2,247)	$ (2,247)
Operating income	$923	$ 1,016

In constant currency[(1)], the Company's growth rates were as follows:

	Twelve Months Ended December 31, 2016	
	GAAP	Non-GAAP
Revenue	5.1%	4.9 %
Operating income	6.1%	3.3 %

[(1)] Constant currency amounts exclude the effect of foreign currency fluctuations on the reported results. To present this information, the results for 2016 for entities whose functional currency is a currency other than the U.S. Dollar were converted to U.S. Dollars at rates that were in effect for 2015, rather than the actual exchange rates in effect for 2016.

The Company's financial position includes $822.9 million in cash and short-term investments, and working capital of $630.3 million as of December 31, 2016.

During the year ended December 31, 2016, the Company repurchased 3.7 million shares for $336.3 million at an average price of $90.90 per share under the Company's stock repurchase program.

Business

On August 29, 2016, the Board of Directors (the “Board”) of the Company appointed Dr. Ajei S. Gopal, a member of the Board, as President and Chief Operating Officer of the Company, effective as of such date. In addition, effective as of January 1, 2017, Dr. Gopal assumed the role of Chief Executive Officer of the Company and Mr. James E. Cashman III, who was the Chief Executive Officer of the Company as of December 31, 2016, became Chairman of

the Board. In connection therewith, Ronald W. Hovsepian, the Chairman of the Board as of December 31, 2016, became the Board's Lead Independent Director.

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ANSYS develops and globally markets engineering simulation software and services widely used by engineers, designers, researchers and students across a broad spectrum of industries and academia, including aerospace and defense, automotive, industrial equipment, electronics, biomedical, energy, materials and chemical processing, and semiconductors. Headquartered south of Pittsburgh, Pennsylvania, the Company employed approximately 2,800 people as of December 31, 2016. ANSYS focuses on the development of open and flexible solutions that enable users to analyze designs directly on the desktop, providing a common platform for fast, efficient and cost-conscious product development, from design concept to final-stage testing and validation. The Company distributes its suite of simulation technologies through a global network of independent channel partners and direct sales offices in strategic, global locations. It is the Company's intention to continue to maintain this hybrid sales and distribution model.

The Company licenses its technology to businesses, educational institutions and governmental agencies. Growth in the Company's revenue is affected by the strength of global economies, general business conditions, currency exchange rate fluctuations, customer budgetary constraints and the competitive position of the Company's products. Please see Item 1A. Risk Factors for a complete discussion of factors that might impact the Company's financial condition and operating results. The Company believes that the features, functionality and integrated multiphysics capabilities of its software products are as strong as they have ever been. However, the software business is generally characterized by long sales cycles. These long sales cycles increase the difficulty of predicting sales for any particular quarter. The Company makes many operational and strategic decisions based upon short- and long-term sales forecasts that are impacted not only by these long sales cycles, but also by current global economic conditions. As a result, the Company believes that its overall performance is best measured by fiscal year results rather than by quarterly results. Please see the sub-section entitled "Sales Forecasts" under Item 1A. Risk Factors for a complete discussion of the potential impact of the Company's sales forecasts on the Company's financial condition, cash flows and operating results.

The Company's management considers the competition and price pressure that it faces in the short- and long-term by focusing on expanding the breadth, depth, ease of use and quality of the technologies, features, functionality and integrated multiphysics capabilities of its software products as compared to its competitors; investing in research and development to develop new and innovative products and increase the capabilities of its existing products; supplying new products and services; focusing on customer needs, training, consulting and support; and enhancing its distribution channels. From time to time, the Company also considers acquisitions to supplement its global engineering talent, product offerings and distribution channels.

Geographic Trends

The following table presents the Company's geographic constant currency revenue growth during the year ended December 31, 2016 as compared to the year ended December 31, 2015:

	Twelve Months Ended December 31, 2016	
North America	3.7	%
Europe	2.9	%
Asia-Pacific	9.0	%
Total	5.1	%

In North America, results were impacted by a combination of factors, including a partial shift in the preference for time-based licenses. Aerospace and defense performed well due to a robust commercial sector, loosening defense spending and the aggressive space race. Automotive companies continued to invest in research and development to support ongoing fuel economy, emissions requirements and accelerated development of autonomous driving systems. The renewable energy and nuclear sectors remained strong, but were offset by the negative impact of the oil and gas sector.

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The Company continues to focus on a number of sales improvement activities across the geographic regions, including sales hiring, pipeline building, productivity initiatives and customer engagement activities.

Note About Forward-Looking Statements

The following discussion should be read in conjunction with the audited consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. The Company's discussion and analysis of its financial condition and results of operations are based upon the Company's consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). The preparation of these financial statements requires the Company to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities. On an ongoing basis, the Company evaluates its estimates, including those related to fair values of stock awards, bad debts, contract revenue, the valuation of goodwill and other intangible assets, deferred compensation, income taxes, uncertain tax positions, tax valuation reserves, and useful lives for depreciation and amortization, and contingencies and litigation. The Company bases its estimates on historical experience, market experience, estimated future cash flows and various other assumptions that management believes are reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933 and Section 21E of the Securities Exchange Act of 1934, including, but not limited to, the following statements, as well as statements that contain such words as "anticipates," "intends," "believes," "plans" and other similar expressions:

- The Company's intentions regarding its hybrid sales and distribution model.
- The Company's intentions related to investments in research and development, particularly as it relates to expanding the ease of use and capabilities of its broad portfolio of simulation software products. More specifically, this includes the evolution of its ANSYS Workbench platform, expansion of high-performance computing capabilities, ANSYS AIM immersive user interface, offerings on ANSYS Enterprise Cloud, robust design and ongoing integration of acquired technology.
- The Company's expectations regarding the accelerated development of new and innovative products to the marketplace while lowering design and engineering costs for customers as a result of the Company's acquisitions.
- The Company's statements regarding the impact of global economic conditions.
- The Company's expectations regarding the outcome of its service tax audit case.
- The Company's expectations regarding the realization of the French research and development credit.
- The Company's belief that, in most geographical locations, its facilities allow for sufficient space to support present and future foreseeable needs, including such expansion and growth as the business may require.
- The Company's expectation that it can renew existing facility leases as they expire or find alternative facilities without difficulty, as needed.
- The Company's assessment of the ultimate liabilities arising from various investigations, claims and legal proceedings.
- The Company's expectations regarding future restructuring charges.
- The Company's statement regarding the strength of the features, functionality and integrated multiphysics capabilities of its software products.
- The Company's belief that its overall performance is best measured by fiscal-year results rather than by quarterly results.
- The Company's expectations regarding the adverse impact on license and maintenance revenue growth in the near term due to an increased customer preference for time-based licenses.

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- The Company's expectation that it will continue to make targeted investments in its global sales and marketing organizations and its global business infrastructure to enhance and support its revenue-generating activities.
- The Company's intention to repatriate previously taxed earnings and to reinvest all other earnings of its non-U.S. subsidiaries.
- The Company's plans related to future capital spending.
- The sufficiency of existing cash and cash equivalent balances to meet future working capital and capital expenditure requirements.
- The Company's belief that the best uses of its excess cash are to invest in the business and repurchase stock in order to both offset dilution and return capital, in excess of its requirements, to stockholders with the goal of increasing stockholder value.
- The Company's intentions related to investments in complementary companies, products, services and technologies.
- The Company's expectations regarding future claims related to indemnification obligations.
- The Company's estimates regarding total compensation expense associated with granted stock-based awards for future years.
- The Company's expectations regarding the impacts of new accounting guidance.
- The Company's assessment of its ability to realize deferred tax assets.

Forward-looking statements should not be unduly relied upon because they involve known and unknown risks, uncertainties and other factors, some of which are beyond the Company's control. The Company's actual results could differ materially from those set forth in the forward-looking statements. Certain factors that might cause such a difference include risks and uncertainties detailed in Item 1A. Risk Factors.

Acquisitions

During the twelve months ended December 31, 2016 and 2015, the Company completed various acquisitions to accelerate the development of new and innovative products to the marketplace while lowering design and engineering costs for customers. The acquisitions were not individually significant. The combined purchase prices of the acquisitions were approximately $10.3 million and $49.7 million for the years ended December 31, 2016 and 2015, respectively.

During the year ended December 31, 2014, the combined purchase price for acquisitions was $104.0 million. The acquisitions during 2014 are further described in the table below:

Date of Closing	Company	Details
April 30, 2014	SpaceClaim Corporation	SpaceClaim, a leading provider of 3-D modeling technology, was acquired for $85.0 million. SpaceClaim's software provides customers with a powerful and intuitive 3-D direct modeling solution to author new concepts and then leverage the power of simulation to rapidly iterate on these designs to drive innovation.
January 3, 2014	Reaction Design	Reaction Design, a leading developer of chemistry simulation software, was acquired for $19.1 million. Reaction Design's solutions enable transportation manufacturers and energy companies to rapidly achieve their clean technology goals by automating the analysis of chemical processes via computer simulation and modeling solutions.

For further information on the Company's business combinations, see Note 3 to the consolidated financial statements included in Part IV, Item 15 of this Annual Report on Form 10-K.

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Results of Operations

For purposes of the following discussion and analysis, the table below sets forth certain consolidated financial data for the years 2016, 2015 and 2014. The operating results of the Company's acquisitions have been included in the results of operations since their respective acquisition dates.

	Year Ended December 31,		
(in thousands)	2016	2015	2014
Revenue:			
Software licenses	$568,174	$555,105	$564,502
Maintenance and service	420,291	387,648	371,519
Total revenue	988,465	942,753	936,021
Cost of sales:			
Software licenses	28,860	29,105	30,607
Amortization	38,092	38,755	37,653
Maintenance and service	79,908	79,386	85,126
Total cost of sales	146,860	147,246	153,386
Gross profit	841,605	795,507	782,635
Operating expenses:			
Selling, general and administrative	269,515	253,603	246,376
Research and development	183,093	168,831	165,421
Amortization	12,755	19,394	23,388
Total operating expenses	465,363	441,828	435,185
Operating income	376,242	353,679	347,450
Interest expense	(221)	(325)	(779)
Interest income	4,209	2,829	3,002
Other income (expense), net	85	582	(1,534)
Income before income tax provision	380,315	356,765	348,139
Income tax provision	114,679	104,244	93,449
Net income	$265,636	$252,521	$254,690

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Year Ended December 31, 2016 Compared to Year Ended December 31, 2015

Revenue:

	Year Ended December 31,		Change	
(in thousands, except percentages)	2016	2015	Amount	%
Revenue:				
Lease licenses	$340,331	$316,367	$23,964	7.6
Perpetual licenses	227,843	238,738	(10,895)	(4.6)
Software licenses	568,174	555,105	13,069	2.4
Maintenance	394,745	364,591	30,154	8.3
Service	25,546	23,057	2,489	10.8
Maintenance and service	420,291	387,648	32,643	8.4
Total revenue	$988,465	$942,753	$45,712	4.8

The Company's revenue increased 4.8% during the year ended December 31, 2016 as compared to the year ended December 31, 2015, while revenue grew 5.1% in constant currency. The growth rate was favorably impacted by the Company's continued investment in its global sales, support and marketing organizations and was adversely impacted by a recent shift in the licensing preference of certain customers from perpetual licenses to lease licenses. Lease license revenue increased 7.6% as compared to the prior year. Perpetual license revenue, which is derived primarily from new sales, decreased 4.6% as compared to the prior year. Annual maintenance contracts that were sold with new perpetual licenses, along with maintenance contracts sold with new perpetual licenses in previous years, contributed to maintenance revenue growth of 8.3%.

With respect to revenue, on average for the year ended December 31, 2016, the U.S. Dollar was 0.5% stronger, when measured against the Company's primary foreign currencies, than for the year ended December 31, 2015. The net overall strengthening resulted in decreased revenue of $2.2 million during the year ended December 31, 2016 as compared to the year ended December 31, 2015. The impact on revenue was primarily driven by $5.6 million, $3.9 million, $1.7 million and $0.9 million of adverse impact due to a weaker Euro, British Pound, South Korean Won and Indian Rupee, respectively, partially offset by $10.4 million of favorable impact due to a stronger Japanese Yen. The fluctuations in the U.S. Dollar resulted in increased operating income of $0.9 million during the year ended December 31, 2016 as compared to the year ended December 31, 2015.

A substantial portion of the Company's license and maintenance revenue is derived from annual lease and maintenance contracts. These contracts are generally renewed on an annual basis and typically have a high rate of customer renewal. In addition to the recurring revenue base associated with these contracts, a majority of customers purchasing new perpetual licenses also purchase related annual maintenance contracts. As a result of the significant recurring revenue base, the Company's license and maintenance revenue growth rate in any period does not necessarily correlate to the growth rate of new license and maintenance contracts sold during that period. To the extent the rate of customer renewal for lease and maintenance contracts is high, incremental lease contracts, and maintenance contracts sold with new perpetual licenses, will result in license and maintenance revenue growth in constant currency. Conversely, if the rate of renewal for these contracts is adversely affected by economic or other factors, the Company's license and maintenance growth will be adversely affected over the term that the revenue for those contracts would have otherwise been recognized.

The Company is starting to experience an increased interest by some of its larger customers in enterprise agreements that often include longer-term, time-based licenses involving a larger number of the Company's software products. While these arrangements typically involve a higher overall transaction price, the revenue from these contracts is typically deferred and recognized over the period of the contract, resulting in increased deferred revenue and backlog. To the extent these types of contracts replace sales of perpetual licenses, there could be a near-term adverse impact on software license and maintenance revenue growth. The Company is similarly experiencing a shifting preference from perpetual licenses to time-based licenses across a broader spectrum of its customers, particularly in the more mature geographic markets, such as the U.S. and Japan. To the extent this shift continues or becomes more prevalent, the result could be a similar and incremental near-term adverse impact on software license

and maintenance revenue growth.

International and domestic revenues, as a percentage of total revenue, were 62.8% and 37.2%, respectively, during the year ended December 31, 2016, and 62.4% and 37.6%, respectively, during the year ended December 31, 2015. The Company derived 24.4% and 24.2% of its total revenue through the indirect sales channel for the years ended December 31, 2016 and 2015, respectively.

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In valuing deferred revenue on the balance sheets of the Company's recent acquisitions as of their respective acquisition dates, the Company applied the fair value provisions applicable to the accounting for business combinations, resulting in a reduction of deferred revenue as compared to its historical carrying amount. As a result, the Company's post-acquisition revenue will be less than the sum of what would have otherwise been reported by ANSYS and each acquiree absent the acquisitions. The impacts on reported revenue for the years ended December 31, 2016 and 2015 were $0.1 million and $1.7 million, respectively.

Cost of Sales and Gross Profit:

The table below reflects the Company's operating results as presented on the consolidated statements of income, which are inclusive of foreign currency translation impacts. Amounts included in the discussion that follows are provided in constant currency. The impact, where material, of foreign exchange translation on each expense line is provided separately.

	Year Ended December 31,					
	2016		2015		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Cost of sales:						
Software licenses	$28,860	2.9	$29,105	3.1	$(245)	(0.8)
Amortization	38,092	3.9	38,755	4.1	(663)	(1.7)
Maintenance and service	79,908	8.1	79,386	8.4	522	0.7
Total cost of sales	146,860	14.9	147,246	15.6	(386)	(0.3)
Gross profit	$841,605	85.1	$795,507	84.4	$46,098	5.8

Software Licenses: Contributing to the minimal change in costs of software were the following two offsetting factors:

- Decreased salaries and other headcount-related costs of $1.2 million, primarily due to a decrease in headcount.
- Increased third-party royalties of $1.2 million.

Amortization: The net decrease in amortization expense was primarily due to a net decrease in the amortization of acquired technology, partially offset by a net increase in the amortization of trade names.

Maintenance and Service: The net increase in maintenance and service costs was primarily due to the following:

- Net increase in salaries, incentive compensation and other headcount-related costs of $3.5 million.
- Increased IT-related maintenance and software hosting costs of $0.5 million.
- Decreased depreciation and severance costs, each of $0.7 million.
- Decreased facility costs of $0.4 million.
- Cost reduction related to foreign exchange translation of $0.4 million due to a stronger U.S. Dollar.
- Decreased business travel and stock-based compensation, each of $0.3 million.

The improvement in gross profit was a result of the increase in revenue and decrease in related cost of sales.

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Operating Expenses:
The table below reflects the Company's operating results as presented on the consolidated statements of income, which are inclusive of foreign currency translation impacts. Amounts included in the discussion that follows are provided in constant currency. The impact, where material, of foreign exchange translation on each expense line is provided separately.

	Year Ended December 31,					
	2016		2015		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Operating expenses:						
Selling, general and administrative	$269,515	27.3	$253,603	26.9	$15,912	6.3
Research and development	183,093	18.5	168,831	17.9	14,262	8.4
Amortization	12,755	1.3	19,394	2.1	(6,639)	(34.2)
Total operating expenses	$465,363	47.1	$441,828	46.9	$23,535	5.3

Selling, General and Administrative: The increase in selling, general and administrative costs was primarily due to the following:
- $4.7 million of costs associated with an employment-related settlement agreement.
- Increased severance costs of $3.2 million.
- Net increase in salaries, incentive compensation and other headcount-related costs of $2.1 million.
- Increased IT-related maintenance and software hosting costs of $2.1 million.
- Increased government charges and taxes of $1.4 million.
- Increased marketing costs of $1.2 million.

The Company anticipates that it will continue to make targeted investments in its global sales and marketing organizations and its global business infrastructure to enhance and support its revenue-generating activities.
Research and Development: The net increase in research and development costs was primarily due to the following:
- Increased salaries, incentive compensation and other headcount-related costs of $10.6 million.
- Increased IT-related maintenance and software hosting costs of $2.1 million.
- Increased stock-based compensation of $0.9 million.
- Cost reduction due to foreign exchange translation of $1.6 million.

The Company has traditionally invested significant resources in research and development activities and intends to continue to make investments in expanding the ease of use and capabilities of its broad portfolio of simulation software products. More specifically, this includes the evolution of its ANSYS Workbench platform, expansion of high-performance computing capabilities, ANSYS AIM immersive user interface, offerings on ANSYS Enterprise Cloud, robust design and ongoing integration of acquired technology.
Amortization: The decrease in amortization expense was primarily due to a decrease in the amortization of acquired customer lists that became fully amortized.
Interest Income: Interest income for the year ended December 31, 2016 was $4.2 million as compared to $2.8 million for the year ended December 31, 2015. Interest income increased as a result of an increase in both the Company's average invested cash balances and the average rate of return on those balances.

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Other Income, net: The Company's other income consists of the following:

(in thousands)	Year Ended December 31, 2016	2015
Foreign currency gains, net	$ 77	$ 486
Other	8	96
Total other income, net	$ 85	$ 582

Income Tax Provision: The Company recorded income tax expense of $114.7 million and had income before income taxes of $380.3 million for the year ended December 31, 2016, representing an effective tax rate of 30.2%. During the year ended December 31, 2015, the Company recorded income tax expense of $104.2 million and had income before income taxes of $356.8 million, representing an effective tax rate of 29.2%.

The increase in the effective tax rate from the prior year is primarily due to tax benefits related to the merger of the Company's Japan subsidiaries in 2010 recognized in 2015 that did not recur in 2016, partially offset by tax benefits from restructuring activities in 2016. When compared to the federal and state combined statutory rate, the effective tax rates for the years ended December 31, 2016 and 2015 were favorably impacted by the domestic manufacturing deduction and research and development credits. The quarterly benefit of approximately $3.1 million associated with the merger of the Company's Japan subsidiaries was fully amortized in the third quarter of 2015. There will be no additional ongoing benefit from this transaction. The rates were also favorably impacted by the recurring item of lower statutory tax rates in many of the Company's foreign jurisdictions.

Net Income: The Company's net income for the year ended December 31, 2016 was $265.6 million as compared to net income of $252.5 million for the year ended December 31, 2015. Diluted earnings per share was $2.99 for the year ended December 31, 2016 and $2.76 for the year ended December 31, 2015. The weighted average shares used in computing diluted earnings per share were 89.0 million and 91.5 million for the years ended December 31, 2016 and 2015, respectively.

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Year Ended December 31, 2015 Compared to Year Ended December 31, 2014

Revenue:

	Year Ended December 31,		Change	
(in thousands, except percentages)	2015	2014	Amount	%
Revenue:				
Lease licenses	$316,367	$318,041	$(1,674)	(0.5)
Perpetual licenses	238,738	246,461	(7,723)	(3.1)
Software licenses	555,105	564,502	(9,397)	(1.7)
Maintenance	364,591	346,698	17,893	5.2
Service	23,057	24,821	(1,764)	(7.1)
Maintenance and service	387,648	371,519	16,129	4.3
Total revenue	$942,753	$936,021	$6,732	0.7

The Company's revenue increased 0.7% during the year ended December 31, 2015 as compared to the year ended December 31, 2014, while revenue grew 7.8% in constant currency. The growth rate was favorably impacted by the Company's continued investment in its global sales, support and marketing organizations. Annual maintenance contracts that were sold with new perpetual licenses, along with maintenance contracts sold with new perpetual licenses in previous years, contributed to maintenance revenue growth of 5.2%. This growth was primarily due to maintenance contracts sold with electronics products. Perpetual license revenue, which is derived primarily from new sales, decreased 3.1% as compared to the prior year. While lease licenses, perpetual licenses and service revenue declined as compared to the prior year, all were higher in constant currency.

With respect to revenue, on average for the year ended December 31, 2015, the U.S. Dollar was 12.5% stronger, when measured against the Company's primary foreign currencies, than for the year ended December 31, 2014. The net overall strengthening resulted in decreased revenue of $65.9 million during the year ended December 31, 2015 as compared to the year ended December 31, 2014. The impact on revenue was primarily driven by $42.7 million, $14.6 million, $2.9 million and $2.9 million of adverse impact due to a weaker Euro, Japanese Yen, South Korean Won and British Pound, respectively. The net overall stronger U.S. Dollar also resulted in decreased operating income of $38.0 million during the year ended December 31, 2015 as compared to the year ended December 31, 2014.

International and domestic revenues, as a percentage of total revenue, were 62.4% and 37.6%, respectively, during the year ended December 31, 2015, and 65.8% and 34.2%, respectively, during the year ended December 31, 2014. The Company derived 24.2% and 24.9% of its total revenue through the indirect sales channel for the years ended December 31, 2015 and 2014, respectively.

In valuing deferred revenue on the balance sheets of the Company's recent acquisitions as of their respective acquisition dates, the Company applied the fair value provisions applicable to the accounting for business combinations, resulting in a reduction of deferred revenue as compared to its historical carrying amount. As a result, the Company's post-acquisition revenue will be less than the sum of what would have otherwise been reported by ANSYS and each acquiree absent the acquisitions. The impacts on reported revenue for the years ended December 31, 2015 and 2014 were $1.7 million and $5.4 million, respectively.

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Cost of Sales and Gross Profit:

The table below reflects the Company's operating results as presented on the consolidated statements of income, which are inclusive of foreign currency translation impacts. Amounts included in the discussion that follows are provided in constant currency. The impact, where material, of foreign exchange translation on each expense line is provided separately.

	Year Ended December 31,					
	2015		2014		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Cost of sales:						
Software licenses	$29,105	3.1	$30,607	3.3	$(1,502)	(4.9)
Amortization	38,755	4.1	37,653	4.0	1,102	2.9
Maintenance and service	79,386	8.4	85,126	9.1	(5,740)	(6.7)
Total cost of sales	147,246	15.6	153,386	16.4	(6,140)	(4.0)
Gross profit	$795,507	84.4	$782,635	83.6	$12,872	1.6

Software Licenses: The net decrease in costs of software licenses was primarily due to the following:

- Decreased stock-based compensation of $1.0 million.
- Cost reduction from foreign exchange translation of $0.9 million.
- Decreased salaries and incentive compensation of $0.9 million.
- Increased SpaceClaim-related costs of software licenses of $0.6 million, primarily as a result of twelve months of SpaceClaim activity in 2015 as compared to eight months of activity in 2014.
- Increased facilities and IT-related maintenance of $0.4 million.
- Increased third-party royalties of $0.2 million.

Amortization: The net increase in amortization expense was primarily due to an increase in the amortization of trade names, partially offset by a cost reduction related to foreign exchange translation.

Maintenance and Service: The net decrease in maintenance and service costs was primarily due to the following:

- Cost reduction related to foreign exchange translation of $7.6 million.
- Increased salaries and severance costs, each of $0.7 million.
- Increased third-party technical support costs of $0.6 million.

The improvement in gross profit was a result of the increase in revenue and decrease in related cost of sales.

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Operating Expenses:

The table below reflects the Company's operating results as presented on the consolidated statements of income, which are inclusive of foreign currency translation impacts. Amounts included in the discussion that follows are provided in constant currency. The impact, where material, of foreign exchange translation on each expense line is provided separately.

	Year Ended December 31,					
	2015		2014		Change	
(in thousands, except percentages)	Amount	% of Revenue	Amount	% of Revenue	Amount	%
Operating expenses:						
Selling, general and administrative	$253,603	26.9	$246,376	26.3	$7,227	2.9
Research and development	168,831	17.9	165,421	17.7	3,410	2.1
Amortization	19,394	2.1	23,388	2.5	(3,994)	(17.1)
Total operating expenses	$441,828	46.9	$435,185	46.5	$6,643	1.5

Selling, General and Administrative: The net increase in selling, general and administrative costs was primarily due to the following:

- Increased salaries, incentive compensation and other headcount-related costs of $18.4 million, primarily due to an increase in headcount.
- Increased third-party commissions of $1.7 million.
- Increased business travel and meals of $1.6 million.
- Increased consulting costs of $1.4 million.
- Increased office lease and utility costs of $1.0 million.
- Cost reduction due to foreign exchange translation of $13.2 million.
- Decreased severance costs of $3.1 million.

Research and Development: The net increase in research and development costs was primarily due to the following:

- Increased salaries and other headcount-related costs of $7.5 million.
- Increased SpaceClaim-related research and development costs of $1.8 million, primarily as a result of twelve months of SpaceClaim activity in 2015 as compared to eight months of activity in 2014.
- Increased office lease and utility costs of $0.6 million.
- Increased facilities and IT-related maintenance of $0.6 million.
- Cost reduction due to foreign exchange translation of $5.4 million.
- Decreased stock-based compensation of $1.8 million.

Amortization: The decrease in amortization expense was primarily due to a net decrease in the amortization of acquired customer lists and a cost reduction related to foreign exchange translation.

Other Income (Expense), net: The Company's other income (expense) consists of the following:

	Year Ended December 31,	
(in thousands)	2015	2014
Foreign currency gains (losses), net	$486	$(1,649)
Other	96	115
Total other income (expense), net	$582	$(1,534)

Income Tax Provision: The Company recorded income tax expense of $104.2 million and had income before income taxes of $356.8 million for the year ended December 31, 2015, representing an effective tax rate of 29.2%. During the year ended

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December 31, 2014, the Company recorded income tax expense of $93.4 million and had income before income taxes of $348.1 million, representing an effective tax rate of 26.8%.

The increase in the effective tax rate from the prior year is primarily due to a decrease in benefits related to legal entity restructuring activities. When compared to the federal and state combined statutory rate, the effective tax rates for the years ended December 31, 2015 and 2014 were favorably impacted by the domestic manufacturing deduction, research and development credits and tax benefits associated with the merger of the Company's Japan subsidiaries in 2010. The quarterly benefit of approximately $3.1 million associated with the merger of the Company's Japan subsidiaries was fully amortized in the third quarter of 2015. There will be no additional ongoing benefit from this transaction. The rates were also favorably impacted by the recurring item of lower statutory tax rates in many of the Company's foreign jurisdictions.

Net Income: The Company's net income for the year ended December 31, 2015 was $252.5 million as compared to net income of $254.7 million for the year ended December 31, 2014. Diluted earnings per share was $2.76 for the year ended December 31, 2015 and $2.70 for the year ended December 31, 2014. The weighted average shares used in computing diluted earnings per share were 91.5 million and 94.2 million for the years ended December 31, 2015 and 2014, respectively.

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Non-GAAP Results

The Company provides non-GAAP revenue, non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share as supplemental measures to GAAP regarding the Company's operational performance. These financial measures exclude the impact of certain items and, therefore, have not been calculated in accordance with GAAP. A detailed explanation and a reconciliation of each non-GAAP financial measure to its most comparable GAAP financial measure are described below.

	Year Ended December 31,							
	2016				2015			
(in thousands, except percentages and per share data)	As Reported	Adjustments		Non-GAAP Results	As Reported	Adjustments		Non-GAAP Results
Total revenue	$988,465	$ 103	(1)	$988,568	$942,753	$ 1,725	(4)	$944,478
Operating income	376,242	88,114	(2)	464,356	353,679	94,665	(5)	448,344
Operating profit margin	38.1 %			47.0 %	37.5 %			47.5 %
Net income	$265,636	$ 57,286	(3)	$322,922	$252,521	$ 60,854	(6)	$313,375
Earnings per share – diluted:								
Earnings per share	$2.99			$3.63	$2.76			$3.42
Weighted average shares	88,969			88,969	91,502			91,502

(1) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(2) Amount represents $50.8 million of amortization expense associated with intangible assets acquired in business combinations, $33.3 million of stock-based compensation expense, the $0.1 million adjustment to revenue as reflected in (1) above, $3.4 million of restructuring charges and $0.4 million of transaction expenses related to business combinations.

(3) Amount represents the impact of the adjustments to operating income referred to in (2) above, adjusted for the related income tax impact of $30.8 million.

(4) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(5) Amount represents $58.1 million of amortization expense associated with intangible assets acquired in business combinations, $34.0 million of stock-based compensation expense, the $1.7 million adjustment to revenue as reflected in (4) above and $0.8 million of transaction expenses related to business combinations.

(6) Amount represents the impact of the adjustments to operating income referred to in (5) above, adjusted for the related income tax impact of $33.8 million.

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(in thousands, except percentages and per share data)	Year Ended December 31, 2015 As Reported	Adjustments		Non-GAAP Results	2014 As Reported	Adjustments		Non-GAAP Results
Total revenue	$942,753	$ 1,725	(1)	$944,478	$936,021	$ 5,421	(4)	$941,442
Operating income	353,679	94,665	(2)	448,344	347,450	104,403	(5)	451,853
Operating profit margin	37.5 %			47.5 %	37.1 %			48.0 %
Net income	$252,521	$ 60,854	(3)	$313,375	$254,690	$ 68,719	(6)	$323,409
Earnings per share – diluted:								
Earnings per share	$2.76			$3.42	$2.70			$3.43
Weighted average shares	91,502			91,502	94,194			94,194

(1) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(2) Amount represents $58.1 million of amortization expense associated with intangible assets acquired in business combinations, $34.0 million of stock-based compensation expense, the $1.7 million adjustment to revenue as reflected in (1) above and $0.8 million of transaction expenses related to business combinations.

(3) Amount represents the impact of the adjustments to operating income referred to in (2) above, adjusted for the related income tax impact of $33.8 million.

(4) Amount represents the revenue not reported during the period as a result of the acquisition accounting adjustment associated with the accounting for deferred revenue in business combinations.

(5) Amount represents $61.0 million of amortization expense associated with intangible assets acquired in business combinations, $36.9 million of stock-based compensation expense, the $5.4 million adjustment to revenue as reflected in (4) above and $1.1 million of transaction expenses related to business combinations.

(6) Amount represents the impact of the adjustments to operating income referred to in (5) above, adjusted for the related income tax impact of $35.7 million.

Non-GAAP Measures

Management uses non-GAAP financial measures (a) to evaluate the Company's historical and prospective financial performance as well as its performance relative to its competitors, (b) to set internal sales targets and spending budgets, (c) to allocate resources, (d) to measure operational profitability and the accuracy of forecasting, (e) to assess financial discipline over operational expenditures and (f) as an important factor in determining variable compensation for management and its employees. In addition, many financial analysts that follow the Company focus on and publish both historical results and future projections based on non-GAAP financial measures. The Company believes that it is in the best interest of its investors to provide this information to analysts so that they accurately report the non-GAAP financial information. Moreover, investors have historically requested and the Company has historically reported these non-GAAP financial measures as a means of providing consistent and comparable information with past reports of financial results.

While management believes that these non-GAAP financial measures provide useful supplemental information to investors, there are limitations associated with the use of these non-GAAP financial measures. These non-GAAP financial measures are not prepared in accordance with GAAP, are not reported by all of the Company's competitors and may not be directly comparable to similarly titled measures of the Company's competitors due to potential differences in the exact method of calculation. The Company compensates for these limitations by using these non-GAAP financial measures as supplements to GAAP financial measures and by reviewing the reconciliations of the non-GAAP financial measures to their most comparable GAAP financial measures.

The adjustments to these non-GAAP financial measures, and the basis for such adjustments, are outlined below:
Acquisition accounting for deferred revenue and its related tax impact. Historically, the Company has consummated acquisitions in order to support its strategic and other business objectives. In accordance with the fair value provisions applicable to the accounting for business combinations, acquired deferred revenue is often recorded on the opening balance sheet at an amount that is lower than the historical carrying value. Although this acquisition accounting requirement has no impact on the Company's business or cash flow, it adversely impacts the Company's reported GAAP revenue in the reporting periods following an acquisition. In order to provide investors with financial information that facilitates comparison of both historical and future results, the Company provides non-GAAP financial measures which exclude the impact of the acquisition accounting adjustment. The Company believes that this non-GAAP financial adjustment is useful to investors because it allows investors to (a) evaluate the effectiveness of the methodology and information used by management in its financial and operational decision-making, and (b) compare past and future reports of financial results of the Company as the revenue reduction related to acquired deferred revenue will not recur when related annual lease licenses and software maintenance contracts are renewed in future periods.
Amortization of intangible assets from acquisitions and its related tax impact. The Company incurs amortization of intangible assets, included in its GAAP presentation of amortization expense, related to various acquisitions it has made. Management excludes these expenses and their related tax impact for the purpose of calculating non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the continuing operational performance of the Company because these costs are fixed at the time of an acquisition, are then amortized over a period of several years after the acquisition and generally cannot be changed or influenced by management after the acquisition. Accordingly, management does not consider these expenses for purposes of evaluating the performance of the Company during the applicable time period after the acquisition, and it excludes such expenses when making decisions to allocate resources. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the effectiveness of the methodology and information used by management in its financial and operational decision-making, and (b) compare past reports of financial results of the Company as the Company has historically reported these non-GAAP financial measures.
Stock-based compensation expense and its related tax impact. The Company incurs expense related to stock-based compensation included in its GAAP presentation of cost of software licenses; cost of maintenance and service; research and development expense; and selling, general and administrative expense. Stock-based compensation expense (benefit) incurred in connection with the Company's deferred compensation plan held in a rabbi trust includes an offsetting benefit (charge) recorded in other income (expense). Although stock-based compensation is an expense of the Company and viewed as a form of compensation, management excludes these expenses for the purpose of calculating non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the continuing operational performance of the Company. Management similarly excludes income (expense) related to assets held in a rabbi trust in connection with the Company's deferred compensation plan. Specifically, the Company excludes stock-based compensation and income related to assets held in the deferred compensation plan rabbi trust during its annual budgeting process and its quarterly and annual assessments of the Company's and management's performance. The annual budgeting process is the primary mechanism whereby the Company allocates resources to various initiatives and operational requirements. Additionally, the annual review by the board of directors during which it compares the Company's historical business model and profitability to the planned business model and profitability for the forthcoming year excludes the impact of stock-based compensation. In evaluating the performance of senior management and department managers, charges related to stock-based compensation are excluded from expenditure and profitability results. In fact, the Company records stock-based compensation expense into a stand-alone cost center for which no single operational manager is responsible or accountable. In this way, management is able to review, on a period-to-period basis, each manager's performance and assess financial discipline over operational expenditures without the effect of stock-based compensation. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the Company's operating results and the effectiveness of the methodology used by

management to review the Company's operating results, and (b) review historical comparability in the Company's financial reporting as well as comparability with competitors' operating results.

Restructuring charges and the related tax impact. The Company occasionally incurs expenses for restructuring its workforce included in its GAAP presentation of cost of software licenses; cost of maintenance and service; research and development expense; and selling, general and administrative expense. Management excludes these expenses for the purpose of calculating non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the continuing operational performance of the Company, as it generally generally does not incur these expenses as a part of its operations. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the Company's operating results and the effectiveness of the methodology used by management to review the Company's operating results, and (b) review historical comparability in the Company's financial reporting as well as comparability with competitors' operating results.

Transaction costs related to business combinations. The Company incurs expenses for professional services rendered in connection with business combinations, which are included in its GAAP presentation of selling, general and administrative expense. These expenses are generally not tax-deductible. Management excludes these acquisition-related transaction expenses for the purpose of calculating non-GAAP operating income, non-GAAP operating profit margin, non-GAAP net income and non-GAAP diluted earnings per share when it evaluates the continuing operational performance of the Company, as it generally would not have otherwise incurred these expenses in the periods presented as a part of its operations. The Company believes that these non-GAAP financial measures are useful to investors because they allow investors to (a) evaluate the Company's operating results and the effectiveness of the methodology used by management to review the Company's operating results, and (b) review historical comparability in the Company's financial reporting as well as comparability with competitors' operating results.

Non-GAAP financial measures are not in accordance with, or an alternative for, GAAP. The Company's non-GAAP financial measures are not meant to be considered in isolation or as a substitute for comparable GAAP financial measures, and should be read only in conjunction with the Company's consolidated financial statements prepared in accordance with GAAP.

The Company has provided a reconciliation of the non-GAAP financial measures to the most directly comparable GAAP financial measures as listed below:

GAAP Reporting Measure	Non-GAAP Reporting Measure
Revenue	Non-GAAP Revenue
Operating Income	Non-GAAP Operating Income
Operating Profit Margin	Non-GAAP Operating Profit Margin
Net Income	Non-GAAP Net Income
Diluted Earnings Per Share	Non-GAAP Diluted Earnings Per Share

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Liquidity and Capital Resources

(in thousands, except percentages)	As of December 31, 2016	2015	Change Amount	%
Cash, cash equivalents and short-term investments	$822,860	$784,614	$38,246	4.9
Working capital	$630,301	$592,280	$38,021	6.4

Cash, Cash Equivalents and Short-Term Investments

Cash and cash equivalents consist primarily of highly liquid investments such as money market funds and deposits held at major banks. Short-term investments consist primarily of deposits held by certain foreign subsidiaries of the Company with original maturities of three months to one year. The following table presents the Company's foreign and domestic holdings of cash, cash equivalents and short-term investments:

(in thousands, except percentages)	As of December 31, 2016	/TD>

		FOR	AGAINST	ABSTAIN
2.	Ratify appointment of Deloitte & Touche LLP as the Company s independent registered public accounting firm.	o	o	o
3.	Approve the Company s Amended and Restated 2002 Stock and Incentive Plan.	o	o	o
4.	In their discretion, the proxies are authorized to vote upon such other business as may properly come before the meeting.			

This proxy is solicited on behalf of the Board of Directors of the Company. This proxy, when properly executed, will be voted in accordance with the instructions given above. If no instructions are given, this proxy will be voted FOR election of the Directors and FOR proposals 2 and 3.

Signature of Stockholder Date: Signature of Stockholder Date:

Note: Please sign exactly as your name or names appear on this Proxy. When shares are held jointly, each holder should sign. When signing as executor, administrator, attorney, trustee or guardian, please give full title as such. If the signer is a corporation, please sign full corporate name by duly authorized officer, giving full title as such. If signer is a partnership, please sign in partnership name by authorized person.

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