

Inside every business

is a more

cognizant one

Helping clients win
in the age of intelligence



What does it mean to be more cognizant?

Drawing on extensive knowledge of our clients' industries, business models and technology environments, we've come to see that inside every business is a more cognizant one. A more cognizant business is future-oriented, responds rapidly to changes in its environment, excels at perceiving what customers will want next, and is continuously alert to everything going on across its operations—all because the enterprise is digital to the core.

When a company is more cognizant, it knows more, so it can do more—for its customers, employees and owners. It's literally built to stay ahead of what's ahead.

To our shareholders

On April 1, 2019, I became the fourth Chief Executive Officer of Cognizant since its founding 25 years ago. I am delighted to lead this remarkable company in its next stage of innovation and growth.

I assumed this role following Francisco D'Souza's 12-year tenure as CEO. With Francisco at the helm, Cognizant has become a global force in technology services and a trusted partner to clients as they design and run stronger, more competitive businesses. Cognizant's annual revenues grew more than 10-fold from \$1.4 billion in 2006 to \$16.1 billion in 2018, moving the company into the Fortune 200. Cognizant scaled its talent base from just under 40,000 to more than 280,000 associates, broadened its expertise to more than 20 industries, and extended its operations to more than 37 countries. Perhaps most important, Francisco shaped and embodied Cognizant's client-first, entrepreneurial, and collaborative culture. I am pleased that Cognizant will continue to benefit from Francisco's perspective as Vice Chairman of our Board, and I am grateful for his advice and support during this transition.

My mission is to extend Cognizant's long track record of success far into the future. To do so, Cognizant must continue to serve as a trusted partner and advisor to businesses that strive to lead their industries by becoming increasingly productive and innovative. We are expert at helping clients digitize their products and services, personalize their customer experiences, automate their essential processes, and modernize their technology infrastructures. Above all, we enable them to deepen connections with their clients in ways that drive greater customer intimacy and spur growth.

As a result, our clients are able to achieve meaningful outcomes like launching products and solutions faster than they used to release prototypes, shortening the length of clinical trials to speed treatments to market, and significantly reducing the incidence of credit card and insurance fraud.

Our three practice areas, which work across the company's industry-aligned business segments, are:

- **Cognizant Digital Business,** which helps our clients apply digital technology to transform their products and customer experiences, driving new levels of revenue growth and customer satisfaction.
- **Cognizant Digital Operations,** which helps clients infuse their business processes with agility, intelligence, and automation.
- **Cognizant Digital Systems and Technology,** which enables clients to build the adaptive, cloud-enabled, secure, and efficient technology backbone needed to run a modern digital enterprise.

We focus our investments on the six advanced capabilities clients need to become fully digital businesses: core modernization, digital engineering and connected products, artificial intelligence (AI) and analytics, intelligent process automation, industry and platform solutions, and interactive customer experiences. (Our work in each is described on pages 4-15.) These six capabilities form the core of Cognizant's digital strategy, which we are committed to executing. We see ample headroom for growth in all of these areas, which offer strong margin profiles and a combined market opportunity that we estimate to be in the hundreds of billions of dollars.

During 2018, Cognizant diversified its revenue base and client roster, invested for growth, and further strengthened its ability to partner with clients on high-value digital initiatives, from strategy through execution. We also intensified our focus on our 100 largest clients, instilled greater operating discipline across the company, expanded our local talent and innovation hubs, and acquired five companies, among them Softvision.

With a significant presence in the software engineering hub of Romania, Cognizant Softvision is one of the top digital engineering companies in the world. We have also continued to invest in industry expertise with our acquisition of Bolder Healthcare Solutions, a leading provider of end-to-end revenue cycle management solutions to hospitals and physicians.

Cognizant's full-year 2018 revenue grew 8.9%, or 8.5% in constant currency,¹ to \$16.13 billion, with digital revenue growing nearly three times faster and accounting for about 30% of total annual revenue. GAAP operating margin was 17.4%, and GAAP EPS was \$3.60. During the year, the company returned \$1.6 billion to shareholders through our capital return program.

¹ See "Non-GAAP Financial Measures" on pages 29-30 of the Annual Report on Form 10-K, which is included in this Annual Report.

Although I've been in my new role just a few weeks, I have learned how deeply intertwined we are with our clients. It is clear to me that Cognizant's future lies in doing what we excel at: investing in talented, diverse, and engaged associates in an inclusive culture, identifying client needs and industry trends, and responding quickly with tailored solutions that facilitate client success.

I'm fortunate to be surrounded by a deeply experienced leadership team, a fully engaged Board of Directors, and, of course, my 280,000 passionate colleagues around the world who share the work we are privileged to do every day. I'm a firm believer that no company can live on its legacy, however great. We are only as good as our future. I am committed to advancing Cognizant's pivot to digital and spurring the next phase of success by staying focused on our associates, clients, and shareholders.

I see Cognizant as a preeminent builder of the global digital economy and a partner of choice for the leading institutions that advance our world. We are also a powerful force for the positive role technology can play in society and will continue to serve the many communities in which we operate through the work of our foundations, our global investments in STEM education, and Cognizant Outreach, our associate-led volunteer organization. We are working energetically to ensure that this bright future becomes a reality.

I am absolutely thrilled to be serving as Cognizant's CEO. Thank you for the opportunity to earn your confidence and trust.



A handwritten signature in black ink, appearing to read 'B. Humphries', with a stylized, cursive flourish at the end.

Brian Humphries
Chief Executive Officer

April 18, 2019



Personal Insurance

Hi! I'm Bobby, a 24/7 Chatbot. I'm new here and still learning. I'll do my best to answer your queries. Please message me below.

I am looking to buy 旅游保險

Bobby

明白! 首先請問你需要單次計劃
或 全年計劃?

Full year plan.

I'm going to be traveling
a lot this year.

Send

Type a message...

Cognizant AI & Analytics

Know what makes
customers
and operations
click

A Hong Kong chatbot speaks the local language —a mix of Cantonese and English.

One of the world's leading insurers wanted to serve customers round-the-clock in the Hong Kong market, a region where contact centers are often shut down by typhoons and heavy rains. Cognizant helped this multinational company, doing business in more than 80 countries, create the first AI-enabled virtual agent in the Hong Kong insurance space. Fluent in two languages, which local customers often use interchangeably, the chatbot can respond to 600 FAQs (in Cantonese, English, or a mixture of both) about policy purchases, coverage, claims, and more.

More cognizant companies know that to compete and grow, they must deepen the connection between their offerings and their customers. So, we're helping clients pinpoint areas of opportunity with artificial intelligence and analytics. By uncovering insights using a combination of human understanding and data modeling, these businesses are adapting to give their customers what they want, at the higher speed and lower cost they need.

Cognizant's industry-specific AI & Analytics solutions help businesses and their employees know more.



HFS Winner's Circle: **Enterprise AI Services and Smart Analytics**

Microsoft **Big Data Analytics Partner of the Year**



Cognizant Industry & Platform Solutions

Find better ways
to **engage**
and **deliver**



Now, a top insurer can pay 40% of its workers' compensation claims automatically.

With medical costs rising sharply, insurers face a big challenge: how can they provide injured employees with the care they deserve, and stay profitable? To help, Cognizant created Optima MedWise™, a software platform with dedicated support from registered nurses. By comparing individual claims against a database of similar cases, MedWise users can develop effective treatment plans while identifying charges that may be unnecessary or excessive for clinical review. With MedWise, one top-five workers' compensation insurer has avoided \$50 million in cost exceptions in just one year, by paying 40% of claims automatically.

When companies are more cognizant, they're aware of operational speed bumps and customer pain points, and look for ways to use technology to leap ahead. By creating proven platforms and solutions designed to meet an industry's most pressing needs, Cognizant is helping clients reinvent how their employees deliver their most important products, services, and experiences to their customers.

Cognizant leverages its deep knowledge of the essential processes in 20 industries to create platforms that improve employee productivity, customer satisfaction, and operational performance.




HFS Winner's Circle: **Insurance, Utilities Operations, and ServiceNow Services Blueprints**



Cognizant Core Modernization

Stay
relevant, responsive,
and **ready**
for anything



Alliance Data's customer satisfaction is up to 98%, now that its operations are running on a robust digital infrastructure.

This major—and growing—provider of loyalty and credit card services needed to upgrade its legacy data center to serve greater volumes of customer transactions. Cognizant led a core modernization project that helped Alliance Data create a virtual data center that can handle more than five million transactions a day while offering a better experience built on Cognizant's IT automation platform, HiveCenter™. Now, customer satisfaction has soared, system reliability is way up, and operating costs are down by \$10 million in the first year.

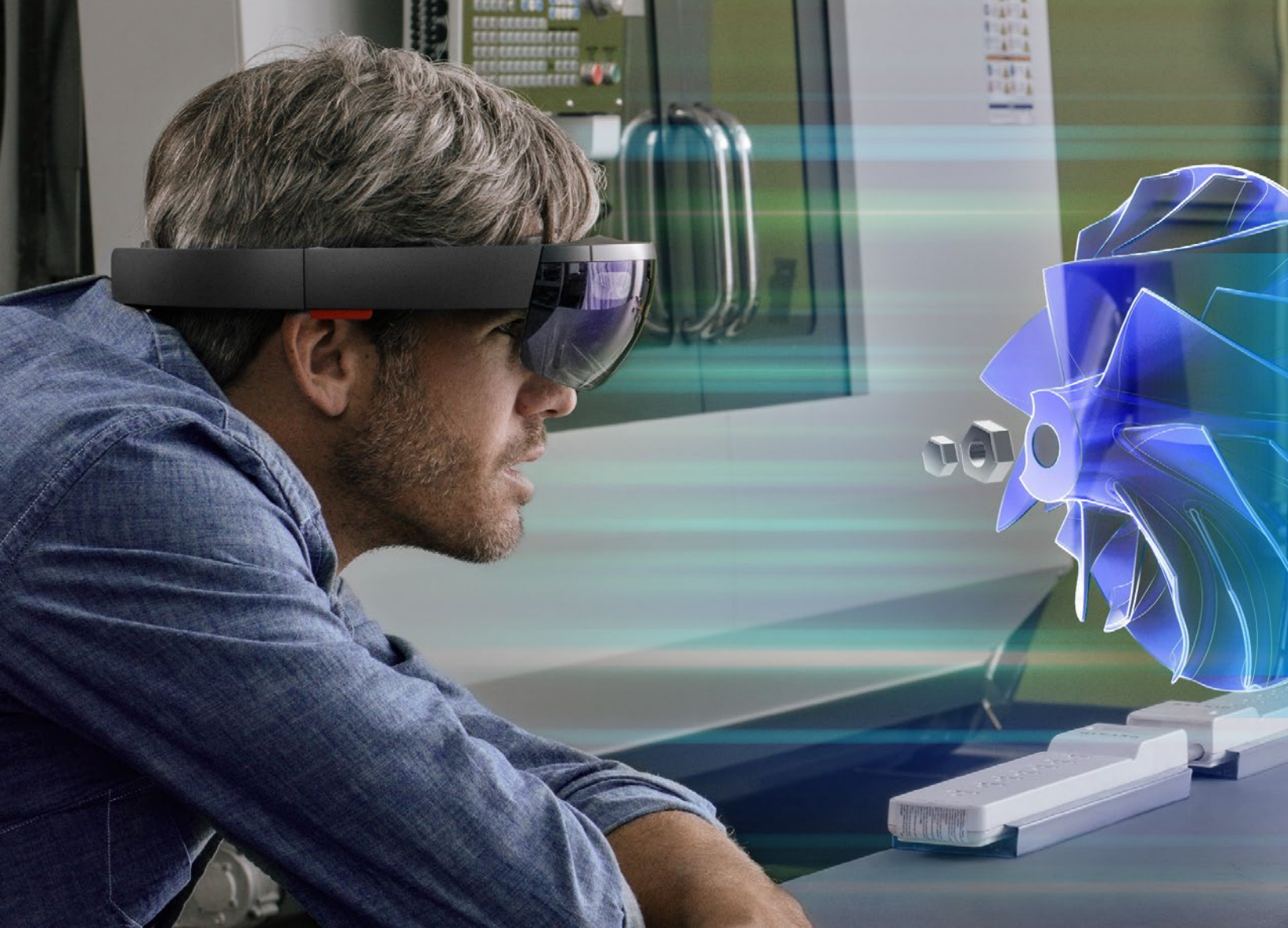
Companies that are more cognizant don't just think about what's ahead—they design their entire business around it. We help clients respond to future customer needs quickly by modernizing their technology backbones with an integrated approach across infrastructure, applications, data, and security. Companies that renew their systems are ready to overdeliver for customers, outscale competitors, and outperform growth targets.

Cognizant's firsthand knowledge of the technology systems of the world's leading companies enables us to help them deliver on the high expectations of their customers, accelerate innovation, and unlock new revenue opportunities.

★★★★

A Leader in the Forrester Wave™: **Applications Management and Digital Operations Services**, Q4 2017

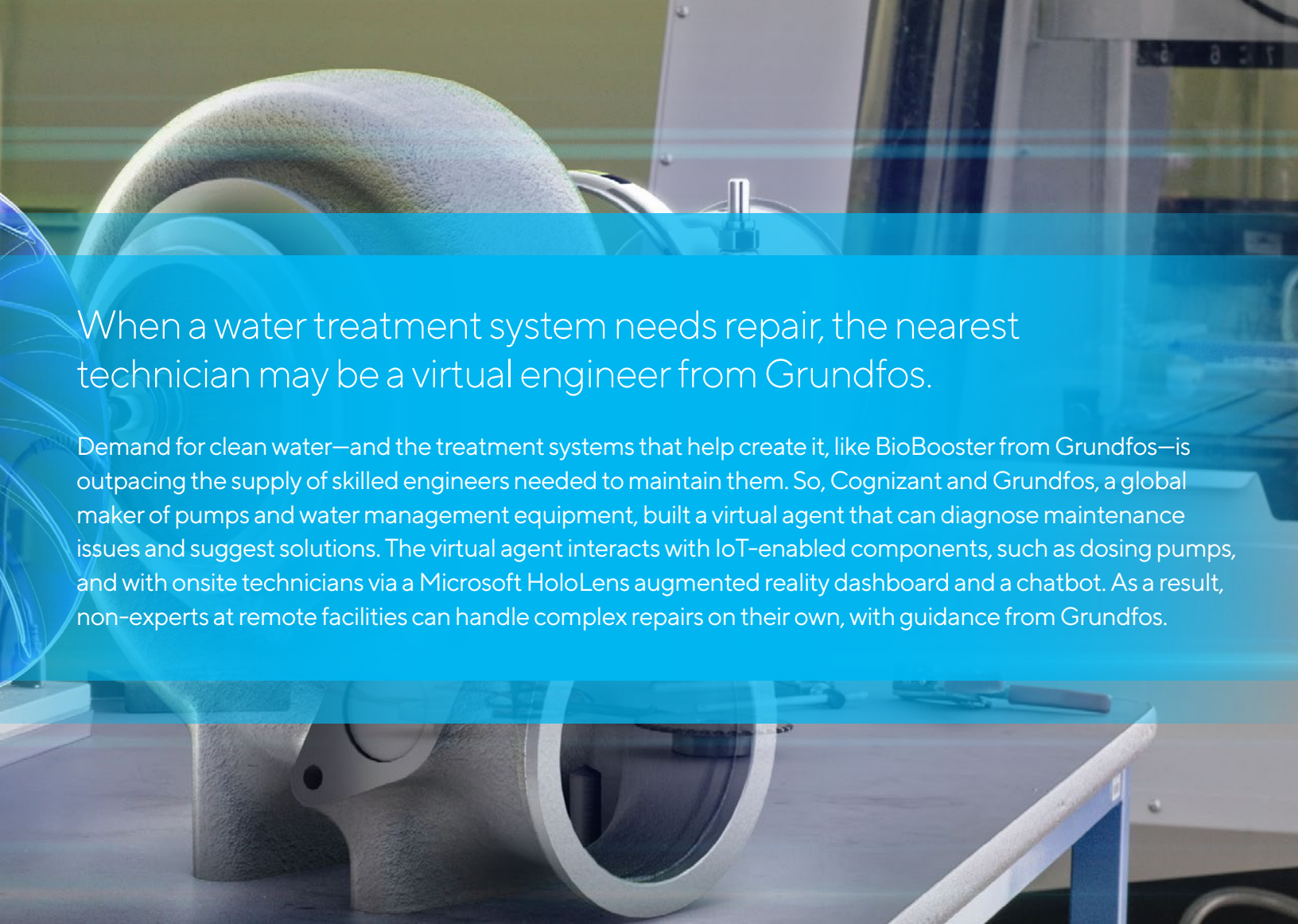
HFS Top 10: **#3 in Infrastructure and Enterprise Cloud Services**



Cognizant Interactive

Create
interactions
that make business
more

personal



When a water treatment system needs repair, the nearest technician may be a virtual engineer from Grundfos.

Demand for clean water—and the treatment systems that help create it, like BioBooster from Grundfos—is outpacing the supply of skilled engineers needed to maintain them. So, Cognizant and Grundfos, a global maker of pumps and water management equipment, built a virtual agent that can diagnose maintenance issues and suggest solutions. The virtual agent interacts with IoT-enabled components, such as dosing pumps, and with onsite technicians via a Microsoft HoloLens augmented reality dashboard and a chatbot. As a result, non-experts at remote facilities can handle complex repairs on their own, with guidance from Grundfos.

More cognizant companies understand that inside every customer or employee experience is an individual one. They know that how they make customers feel can be as important as price and product, and that the interfaces employees use in their jobs can determine how effective they are. So, Cognizant is helping clients design and deliver world-class experiences that are AI-driven, platform-enabled, and inspired by insight into our most human needs, wants, and ways of working.

Cognizant combines the creativity of an agency with the expertise of a global technology company, developing new experiences and managing marketing, commerce, and content efforts for almost every industry.



AdAge: #1 Digital Agency Network in the U.S., #3 Digital Agency Network Globally



Cognizant Intelligent Process Automation

Uncover
hidden potential
in **workflows**
and **workforces**



Automation can process Medicare and Medicaid claims six times faster.

Preparing for a sharp rise in claims, particularly in the coordination of benefits area, where payment responsibility must be allocated among several insurance plans, a leading provider of Medicaid and other government health programs in the U.S. looked to automation. Cognizant helped build a claims management system with Pega robotics process automation, integrating it into the insurer's existing systems. Today, the more than 100 bots in production are resolving claims six times faster, and at a lower cost per claim.

When a company is more cognizant, its most essential resource—its people—are free from mundane work that saps the time needed for innovation. That's why Cognizant is helping clients use automation to take operational performance to the next level: reducing inefficiencies, increasing accuracy, and responding immediately to challenges and customers.

Benefiting from our longstanding investments in vertical expertise, Cognizant automation changes how businesses work for the better, boosting performance by freeing employees to better serve their customers and innovate.



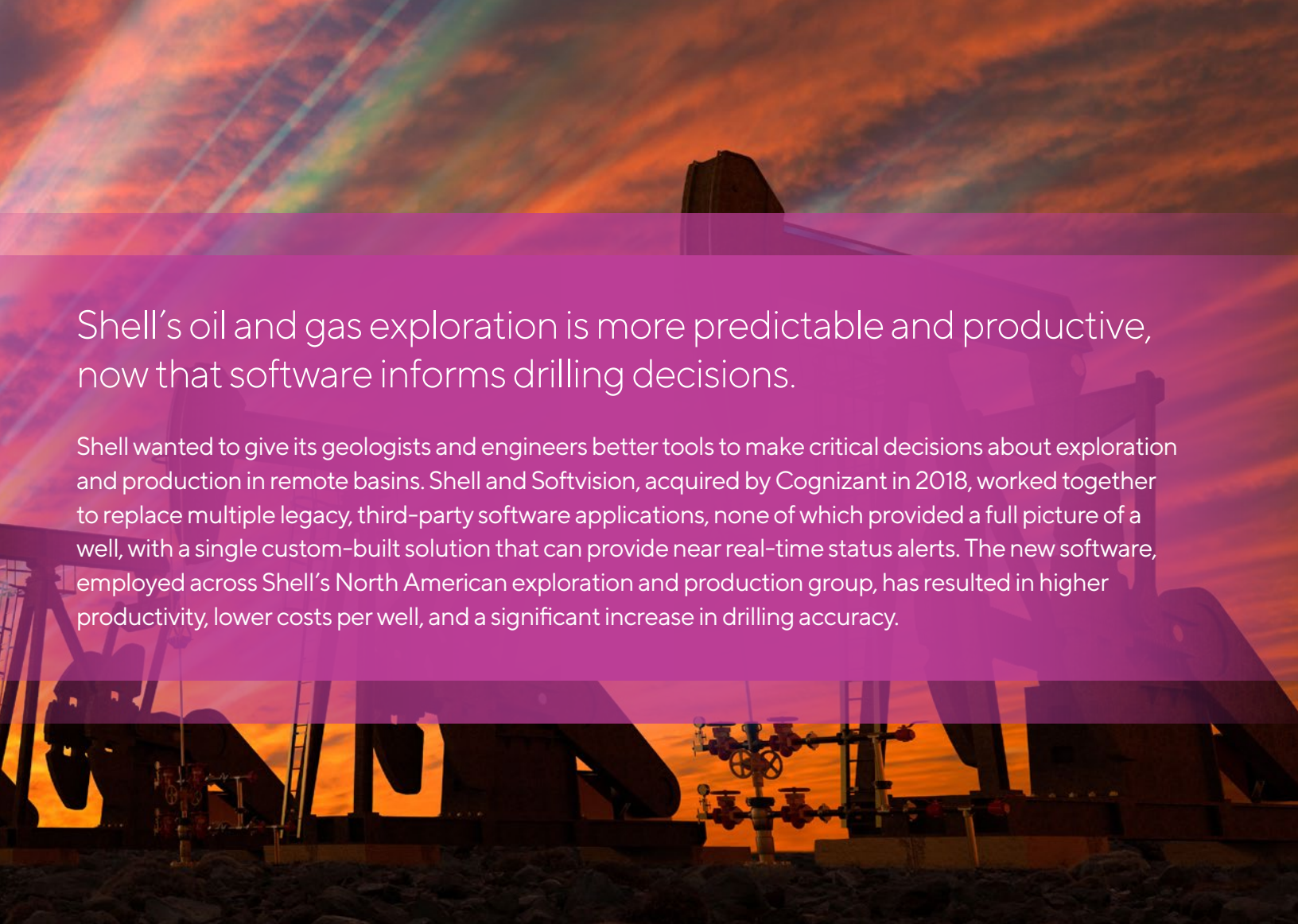
A Leader in the Forrester Wave™: **Digital Process Automation Service Providers**, Q3 2018

HFS Winner's Circle: **Banking Automation, Digital OneOffice Capabilities**



Cognizant Softvision | Digital Engineering

Build digital
products while becoming a
digital
business



Shell's oil and gas exploration is more predictable and productive, now that software informs drilling decisions.

Shell wanted to give its geologists and engineers better tools to make critical decisions about exploration and production in remote basins. Shell and Softvision, acquired by Cognizant in 2018, worked together to replace multiple legacy, third-party software applications, none of which provided a full picture of a well, with a single custom-built solution that can provide near real-time status alerts. The new software, employed across Shell's North American exploration and production group, has resulted in higher productivity, lower costs per well, and a significant increase in drilling accuracy.

More cognizant businesses are able to design and deliver the products and experiences its customers need and want, rapidly. Cognizant helps clients innovate and scale swiftly, from modernizing the applications and platforms that have been at the heart of their business for decades, to designing, prototyping, and delivering new consumer-facing products and experiences. By embracing agile methods that put customers at the center, these businesses and their offerings become faster, smarter, and more capable every day.

Cognizant Softvision uses human insights and future-ready engineering practices to help clients build a new generation of software products and experiences at digital velocity.

★★★★

HFS Winner's Circle: **Software Product Engineering**

Pivotal Systems **Integrator of the Year for Application Scale**

Sustained growth



Revenue

in billions
CAGR (5-yr): 13%

Operating income

in millions
CAGR (5-yr): 11%

Balanced capital allocation

Capital return
through dividends and share repurchases

\$1.6B

Growing expertise through acquisitions

In 2018, we expanded our digital, geographic, and industry capabilities

Cognizant Softvision

Digital product engineering

SAASFOCUS
A Cognizant Company

Salesforce consulting, Asia-Pacific

atg advanced technology group
A Cognizant Company

Salesforce Quote-to-Cash

BOLDER Healthcare Solutions
A Cognizant Company

Healthcare revenue cycle management

HEDERA
A Cognizant Company

Consulting and analytics, Europe

Strong balance sheet

Cash and short-term investments

down from \$5.1B at the close of 2017

\$4.5B*

*As of December 31, 2018

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

FORM 10-K

**FOR ANNUAL AND TRANSITION REPORTS
PURSUANT TO SECTIONS 13 OR 15(d) OF THE
SECURITIES EXCHANGE ACT OF 1934**

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period from _____ to _____

Commission File Number 0-24429

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
(Exact Name of Registrant as Specified in Its Charter)

Delaware

(State or Other Jurisdiction of
Incorporation or Organization)

13-3728359

(I.R.S. Employer
Identification No.)

**Glenpointe Centre West
500 Frank W. Burr Blvd.
Teaneck, New Jersey**

(Address of Principal Executive Offices)

07666

(Zip Code)

Registrant's telephone number, including area code: (201) 801-0233

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

<u>Title of each class</u>	<u>Name of each exchange on which registered</u>
Class A Common Stock, \$0.01 par value per share	The Nasdaq Stock Market LLC

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes No

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

Indicate by check mark whether the registrant (1) has filed all reports required to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes No

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes No

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
Emerging Growth Company	<input type="checkbox"/>		

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

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

The aggregate market value of the registrant's voting shares of common stock held by non-affiliates of the registrant on June 30, 2018, based on \$78.99 per share, the last reported sale price on the Nasdaq Global Select Market of the Nasdaq Stock Market LLC on that date, was \$45.7 billion.

The number of shares of Class A common stock, \$0.01 par value, of the registrant outstanding as of February 8, 2019 was 575,099,275 shares.

DOCUMENTS INCORPORATED BY REFERENCE

The following documents are incorporated by reference into the Annual Report on Form 10-K: Portions of the registrant's definitive Proxy Statement for its 2019 Annual Meeting of Stockholders are incorporated by reference into Part III of this Report.

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PART I

Item 1. Business

Overview

Cognizant is one of the world's leading professional services companies, transforming clients' business, operating and technology models for the digital era. Our industry-based, consultative approach helps customers envision, build and run more innovative and efficient businesses. Our services include digital services and solutions, consulting, application development, systems integration, application testing, application maintenance, infrastructure services and business process services. Digital services are becoming an increasingly important part of our portfolio of services and solutions and are often integrated or delivered along with our other services. We tailor our services and solutions to specific industries and use an integrated global delivery model that employs customer service teams based at customer locations and delivery teams located at customer locations and dedicated global and regional delivery centers.

Business Segments

We go to market across our four industry-based business segments. Our customers seek to partner with service providers that have a deep understanding of their businesses, industry initiatives, clients, markets and cultures and the ability to create solutions tailored to meet their individual business needs. We believe that our deep knowledge of the industries we serve and our clients' businesses has been central to our revenue growth and high customer satisfaction. Our business segments are as follows:

<u>Financial Services</u>	<u>Healthcare</u>	<u>Products and Resources</u>	<u>Communications, Media and Technology</u>
<ul style="list-style-type: none">• Banking• Insurance	<ul style="list-style-type: none">• Healthcare• Life Sciences	<ul style="list-style-type: none">• Retail and Consumer Goods• Manufacturing and Logistics• Travel and Hospitality• Energy and Utilities	<ul style="list-style-type: none">• Communications and Media• Technology

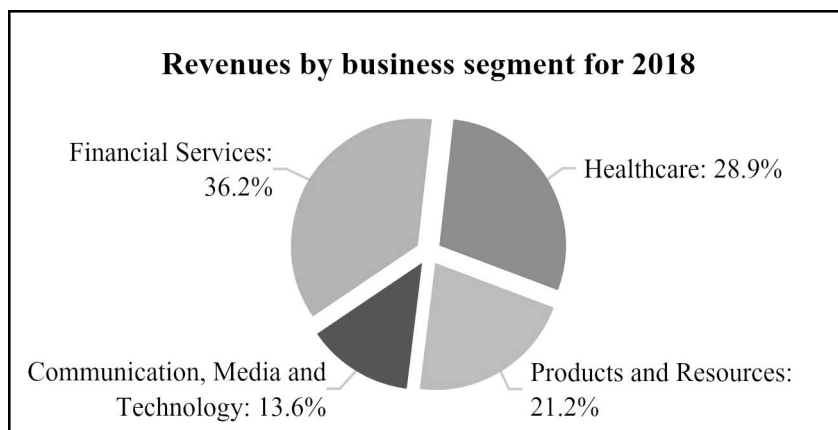
Our Financial Services segment includes banking, capital markets and insurance companies. Demand in this segment is driven by our customers' focus on cost optimization in the face of profitability pressures, the need to be compliant with significant regulatory requirements and adaptable to regulatory change, and their adoption and integration of digital technologies, including customer experience enhancement, robotic process automation, analytics and artificial intelligence in areas such as digital lending and next generation payments.

Our Healthcare segment consists of healthcare providers and payers as well as life sciences companies, including pharmaceutical, biotech and medical device companies. Demand in this segment is driven by emerging industry trends, including enhanced compliance, integrated health management, claims investigative services, as well as services that drive operational improvements in areas such as claims processing, enrollment, membership and billing, in addition to the adoption and integration of digital technologies, such as artificial intelligence, personalized care plans and predictive data analytics to improve patient outcomes.

Our Products and Resources segment includes manufacturers, retailers, travel and hospitality companies, as well as companies providing logistics, energy and utility services. Demand in this segment is driven by our customers' focus on improving the efficiency of their operations, the enablement and integration of mobile platforms to support sales and other omni channel commerce initiatives, and their adoption and integration of digital technologies, such as the application of intelligent systems to manage supply chain and enhance overall customer experiences.

Our Communications, Media and Technology segment includes information, media and entertainment, communications and technology companies. Demand in this segment is driven by our customers' need to manage their digital content, create differentiated user experiences, transition to agile development methodologies, enhance their networks and adopt and integrate digital technologies, such as cloud enablement and interactive and connected products.

For the year ended December 31, 2018, the distribution of our revenues across our four industry-based business segments was as follows:



See [Note 3](#) to our consolidated financial statements for additional information related to disaggregation of revenues by customer location, service line and contract-type for each of our business segments.

Services and Solutions

Our services include digital services and solutions, consulting, application development, systems integration, application testing, application maintenance, infrastructure services and business process services. Additionally, we develop, license, implement and support proprietary and third-party software products and platforms for the healthcare industry. Digital services and solutions, such as analytics and artificial intelligence, digital engineering, intelligent process automation, interactive and hybrid cloud, are becoming an increasingly important part of our portfolio of services and solutions. In many cases, our customers' new digital systems are built upon the backbone of their existing legacy systems. Also, customers often look for efficiencies in the way they run their operations so they can fund investments in new digital capabilities. We believe our deep knowledge of their infrastructure and systems provides us with a significant advantage as we work with them to build new digital capabilities and apply digital technologies to make their operations more efficient. We deliver all our services and solutions across our four industry-based business segments to best address our customers individual needs.

We seek to drive organic growth through investments in our digital capabilities, including the extensive training and re-skilling of our technical teams and the expansion of our local workforces in the United States and other markets around the world where we operate. Additionally, we pursue select strategic acquisitions, joint ventures, investments and alliances that can expand our digital capabilities or the geographic or industry coverage of our business. In 2018, we completed five such acquisitions: Bolder Healthcare Solutions, a provider of revenue cycle management solutions to the healthcare industry in the United States; Hedera Consulting, a business advisory and data analytics service provider in Belgium and the Netherlands; Softvision, a digital engineering and consulting company with significant operations in Romania and India that focuses on agile development of custom cloud-based software and platforms for customers primarily in the United States; ATG, a United States based consulting company that helps companies plan, implement, and optimize automated cloud-based quote-to-cash business processes and technologies; and SaaSfocus, a Salesforce services provider in Australia.

We have organized our services and solutions into three practice areas: Digital Business, Digital Operations, and Digital Systems and Technology. These practice areas are supported by Cognizant Consulting, our Global Technology Office and Cognizant Accelerator.

Cognizant Digital Business	Cognizant Digital Operations	Cognizant Digital Systems & Technology
Cognizant Consulting, Global Technology Office & Cognizant Accelerator		

Cognizant Digital Business

Our digital business practice helps customers rethink their business models, working with customers to reinvent existing businesses and create new ones by innovating products, services, and experiences. Areas of focus within this practice area are digital strategy, artificial intelligence and analytics, connected products, interactive user experiences and digital engineering that builds next-generation applications and experiences at speed and scale. These services are often delivered along with our application development, systems integration and digital services.

Cognizant Digital Operations

Our digital operations practice helps customers rethink their operating models and modernize their business operations by re-engineering and managing their most essential business processes resulting in lower operating costs, better employee and customer outcomes and improved top-line growth. Areas of focus within this practice area are intelligent process automation, industry and platform solutions and enterprise services. We have extensive knowledge of core front office, middle office and back office processes, including finance and accounting, procurement, data management, and research and analytics, which we integrate with our industry and technology expertise to deliver targeted business process services and solutions. Our highly specialized domain expertise is important in creating industry-aligned solutions for our customers' needs in areas such as clinical data management, pharmacovigilance, equity research support, commercial operations and order management.

Cognizant Digital Systems & Technology

Our digital systems and technology practice helps customers reshape their technology models to simplify, modernize and secure the enabling systems that form the backbone of their business. Areas of focus within this practice area include system integration services, infrastructure services (including cloud), quality engineering and assurance, and security and application services. Our application services include traditional development, testing and maintenance and agile development of new software and applications that transform existing businesses at speed and scale.

Cognizant Consulting, Global Technology Office, and Cognizant Accelerator

Supporting our three practice areas, the Cognizant Consulting team provides global business, process, operations and technology consulting services to our customers. Our consulting professionals and domain experts from our industry-focused business segments work closely with our practice areas to create frameworks, platforms and solutions that customers find valuable as they pursue new efficiencies and look to leverage digital technologies across their operations. Our Global Technology Office and Cognizant Accelerator focus on utilizing new technologies to develop innovative and practical offerings for customers' emerging needs and support our business segments and practice areas.

Global Delivery Model

We utilize a global delivery model, with delivery centers worldwide, to provide the full range of services we offer to our customers. Our global delivery model includes four distinct delivery methods, with most customer engagements utilizing several or all of these delivery methods. Our global delivery model includes employees located in the following locations: customers' sites, local or in-country delivery centers, regional delivery centers and offshore delivery centers. As we scale our digital services and solutions, we are focused on hiring in the United States and other countries to expand our in-country delivery capabilities. Our extensive facilities, technology and communications infrastructure are designed to enable the effective collaboration of our global workforce across locations and geographies.

Sales and Marketing

We market and sell our services directly through our professional staff, senior management and direct sales personnel operating out of our global headquarters and business development offices, which are strategically located around the world. The sales and marketing group works with our customer delivery team as the sales process moves closer to a customer's selection of a services provider. The duration of the sales process may vary widely depending on the type and complexity of services.

Customers

The services we provide are distributed among a number of customers in each of our business segments. A loss of a significant customer or a few significant customers in a particular segment could materially reduce revenues for that segment. However, the services we provide to our larger customers are often critical to their operations and a termination of our services would typically require an extended transition period with gradually declining revenues. The volume of work performed for specific customers is likely to vary from year to year, and a significant customer in one year may not use our services in a subsequent year. Revenues from our top customers as a percentage of total revenues were as follows:

	For the years ended December 31,		
	2018	2017	2016
Top five customers	8.6%	8.9%	10.0%
Top ten customers	15.4%	14.9%	16.7%

Competition

The markets for our services are highly competitive, characterized by a large number of participants and subject to rapid change. Competitors may include systems integration firms, contract programming companies, application software companies, cloud computing service providers, traditional consulting firms, professional services groups of computer equipment companies, infrastructure management and outsourcing companies and boutique digital companies. Our direct competitors include, among others, Accenture, Atos, Capgemini, Deloitte Digital, DXC Technology, EPAM Systems, Genpact, HCL Technologies, IBM Global Services, Infosys Technologies, Tata Consultancy Services and Wipro. In addition, we compete with numerous smaller local companies in the various geographic markets in which we operate.

The principal competitive factors affecting the markets for our services include the provider's reputation and experience, vision and strategic advisory ability, digital services capabilities, performance and reliability, responsiveness to customer needs, financial stability, corporate governance and competitive pricing of services. Accordingly, we rely on the following to compete effectively:

- investments to scale our digital services;
- our recruiting, training and retention model;
- our global service delivery model;
- an entrepreneurial culture and approach to our work;
- a broad customer referral base;
- investment in process improvement and knowledge capture;
- financial stability and good corporate governance;
- continued focus on responsiveness to customer needs, quality of services and competitive prices; and
- project management capabilities and technical expertise.

Intellectual Property

We provide value to our customers based, in part, on our proprietary innovations, methodologies, reusable knowledge capital and other intellectual property ("IP") assets. We recognize the importance of IP and its ability to differentiate us from our competitors. We seek IP protection for some of our innovations and rely on a combination of IP laws, confidentiality procedures and contractual provisions, to protect our IP and our brand. We have registered, and applied for the registration of, U.S. and international trademarks, service marks, domain names and copyrights. We own or are licensed under a number of patents, trademarks, copyrights, and licenses, which vary in duration, relating to our products and services. While our proprietary IP rights are important to our success, we believe our business as a whole is not materially dependent on any particular IP right, or any particular group of patents, trademarks, copyrights or licenses.

Employees

We had approximately 281,600 employees at the end of 2018, with approximately 50,000 in North America, approximately 18,300 in Europe and approximately 213,300 in various other locations throughout the rest of the world, including approximately 194,700 in India. We are not party to any significant collective bargaining agreements.

Our Executive Officers

On February 6, 2019, we announced that the Board of Directors has appointed Brian Humphries as our Chief Executive Officer and as a member of the Board, in each case effective April 1, 2019. Francisco D'Souza will step down as the Company's Chief Executive Officer, effective April 1, 2019, and has agreed to serve as an advisor to the new Chief Executive Officer with the title of "Executive Vice Chairman" from April 1, 2019 through June 30, 2019. Thereafter, he will continue to serve as Vice Chairman of the Board of Directors. Rajeev Mehta will step down as our President, effective on April 1, 2019, and will thereafter serve as an advisor to the new Chief Executive Officer from April 1, 2019 through May 1, 2019, at which point Mr. Mehta's employment with us will terminate.

The following table identifies our current executive officers:

<u>Name</u>	<u>Age</u>	<u>Capacities in Which Served</u>	<u>In Current Position Since</u>
Francisco D'Souza ⁽¹⁾	50	Chief Executive Officer	2007
Rajeev Mehta ⁽²⁾	52	President	2016
Karen McLoughlin ⁽³⁾	54	Chief Financial Officer	2012
Ramakrishnan Chandrasekaran ⁽⁴⁾	61	Executive Vice Chairman, Cognizant India	2013
Debashis Chatterjee ⁽⁵⁾	53	Executive Vice President and President, Global Delivery	2016
Ramakrishna Prasad Chintamaneni ⁽⁶⁾	49	Executive Vice President and President, Global Industries and Consulting	2016
Malcolm Frank ⁽⁷⁾	52	Executive Vice President, Strategy and Marketing	2012
Matthew Friedrich ⁽⁸⁾	52	Executive Vice President, General Counsel, Chief Corporate Affairs Officer and Secretary	2017
Sumithra Gomatom ⁽⁹⁾	51	Executive Vice President and President, Digital Operations	2016
Gajakarnan Vibushanan Kandiah ⁽¹⁰⁾	51	Executive Vice President and President, Digital Business	2016
Venkat Krishnaswamy ⁽¹¹⁾	65	Vice Chairman, Healthcare and Life Sciences	2013
James Lennox ⁽¹²⁾	54	Executive Vice President, Chief People Officer	2016
Sean Middleton ⁽¹³⁾	37	Senior Vice President and President, Cognizant Accelerator	2017
Allen Shaheen ⁽¹⁴⁾	56	Executive Vice President, North American Digital Hubs	2018
Dharmendra Kumar Sinha ⁽¹⁵⁾	56	Executive Vice President and President, Global Client Services	2013
Robert Telesmanic ⁽¹⁶⁾	52	Senior Vice President, Controller and Chief Accounting Officer	2017
Santosh Thomas ⁽¹⁷⁾	50	Executive Vice President and President, Global Growth Markets	2016
Srinivasan Veeraraghavachary ⁽¹⁸⁾	59	Chief Operating Officer	2016

- (1) Francisco D'Souza has been our Chief Executive Officer and a member of the Board of Directors since 2007. He has been Vice Chair of our Board of Directors since 2018. He also served as our President from 2007 to 2012. Mr. D'Souza joined Cognizant as a co-founder in 1994, the year it was started as a division of The Dun & Bradstreet Corporation, and was our Chief Operating Officer from 2003 to 2006 and held a variety of other senior management positions at Cognizant from 1997 to 2003. Mr. D'Souza has served on the Board of Directors of General Electric Company ("GE") since 2013, where he is currently a member of the Governance & Public Affairs Committee and the Management Development & Compensation Committee. He also serves on the Board of Trustees of Carnegie Mellon University and as Co-Chairman of the Board of Trustees of The New York Hall of Science. Mr. D'Souza has a Bachelor of Business Administration degree from the University of Macau and a Master of Business Administration ("MBA") degree from Carnegie Mellon University.
- (2) Rajeev Mehta has been our President since September 2016. From December 2013 to September 2016, Mr. Mehta served as our Chief Executive Officer, IT Services. From February 2012 to December 2013, Mr. Mehta served as our Group Chief Executive - Industries and Markets. Mr. Mehta held other senior management positions in client services and our financial services business segment from 2001 to 2012. Prior to joining Cognizant in 1997, Mr. Mehta was involved in implementing GE Information Services' offshore outsourcing program and also held consulting positions at Deloitte & Touche LLP and

Andersen Consulting. Mr. Mehta has a Bachelor of Science degree from the University of Maryland and an MBA degree from Carnegie Mellon University.

- (3) Karen McLoughlin has been our Chief Financial Officer since February 2012. Ms. McLoughlin has held various senior management positions in our finance department since she joined Cognizant in 2003. Prior to joining Cognizant, Ms. McLoughlin held various financial management positions at Spherion Corporation and Ryder System, Inc. and served in various audit roles at Price Waterhouse (now PricewaterhouseCoopers). Ms. McLoughlin has served on the Board of Directors of Best Buy Co., Inc. since 2015, where she is currently a member of the Audit Committee and the Finance and Investment Policy Committee. Ms. McLoughlin has a Bachelor of Arts degree in Economics from Wellesley College and an MBA degree from Columbia University.
- (4) Ramakrishnan Chandrasekaran has been our Executive Vice Chairman, Cognizant India since December 2013. From February 2012 to December 2013, Mr. Chandrasekaran served as our Group Chief Executive - Technology and Operations. Mr. Chandrasekaran held other senior management positions in global delivery from 1999 to 2012. Prior to joining us in 1994, Mr. Chandrasekaran worked with Tata Consultancy Services. Mr. Chandrasekaran has a Mechanical Engineering degree and an MBA degree from the Indian Institute of Management.
- (5) Debashis Chatterjee has been our Executive Vice President and President, Global Delivery and managed our Digital Systems and Technology practice area since August 2016. From December 2013 to August 2016, Mr. Chatterjee served as Executive Vice President and President, Technology Solutions. From May 2013 to December 2013, Mr. Chatterjee served as Senior Vice President and Global Head, Technology and Information Services. From March 2012 to April 2013, he was Senior Vice President, Transformational Services. Mr. Chatterjee worked at International Business Machine Corporation from 2011 to 2012 as Vice President and Sectors Leader, Global Business Services, Global Delivery. Prior to that, Mr. Chatterjee held various senior positions in the Banking and Financial Services ("BFS") practice at Cognizant from 2004 to 2011 and other management roles at Cognizant since joining us in 1996. He has been in our industry since 1987, having previously worked at Tata Consultancy Services and Mahindra & Mahindra. Mr. Chatterjee has a Bachelor of Engineering degree in Mechanical Engineering from Jadavpur University in India.
- (6) Ramakrishna Prasad Chintamaneni has been our Executive Vice President and President, Global Industries and Consulting since August 2016. Mr. Chintamaneni served as our Executive Vice President and President, BFS, from December 2013 to August 2016. From 2011 to December 2013, Mr. Chintamaneni served as our Global Head of the BFS practice. Mr. Chintamaneni held various senior positions in the BFS practice from 2006 to 2011 and was a client partner in our BFS practice from 1999 to 2006. Prior to joining Cognizant in 1999, Mr. Chintamaneni spent seven years in the investment banking and financial services industry, including working at Merrill Lynch and its affiliates for five years as an Investment Banker and a member of Merrill's business strategy committee in India. Mr. Chintamaneni has a Bachelor of Technology degree in Chemical Engineering from the Indian Institute of Technology, Kanpur and a Postgraduate Diploma in Business Management from the XLRI - Xavier School of Management in India.
- (7) Malcolm Frank has been our Executive Vice President, Strategy and Marketing since February 2012. Mr. Frank served as our Senior Vice President of Strategy and Marketing from 2005 to 2012. Prior to joining Cognizant in 2005, Mr. Frank was a founder and the President and Chief Executive Officer of CXO Systems, Inc., an independent software vendor providing dashboard solutions for senior managers, a founder and the President, Chief Executive Officer and Chairman of NerveWire Inc., a management consulting and systems integration firm, and a founder and executive officer at Cambridge Technology Partners, an information technology professional services firm. Mr. Frank has served on the Board of Directors of Factset Research Systems Inc. since June 2016, where he is a member of the Compensation Committee. Mr. Frank has a Bachelor degree in Economics from Yale University.
- (8) Matthew Friedrich has been our Executive Vice President, General Counsel, Chief Corporate Affairs Officer and Secretary since May 2017. Prior to joining Cognizant, Mr. Friedrich was Chief Corporate Counsel for Chevron Corporation, a multinational energy company, from August 2014 to May 2017, a partner with the law firm of Freshfields Bruckhaus Deringer LLP from April 2013 to August 2014 and a partner with the law firm of Boies Schiller & Flexner LLP from June 2009 to April 2013. Mr. Friedrich began his legal career in 1995 as a federal prosecutor with the United States Department of Justice, where he remained for nearly 14 years, culminating with his designation as the acting assistant Attorney General of the Criminal Division in 2008. Mr. Friedrich is a life member of the Council on Foreign Relations and serves on the Board of Directors of the U.S.-India Business Council. Mr. Friedrich has a Bachelor of Arts degree in Foreign Affairs from the University of Virginia and a Juris Doctor degree from the University of Texas School of Law.
- (9) Sumithra Gomatam has been our Executive Vice President and President, Digital Operations since August 2016. From December 2013 to August 2016, Ms. Gomatam served as our Executive Vice President and President, Industry Solutions. From 2008 to December 2013, Ms. Gomatam served as Senior Vice President, and global leader for our Testing practice. Ms. Gomatam held other management positions in our global delivery and BFS practices from 1995 to 2008. Ms. Gomatam has a Bachelor of Engineering degree in Electronics and Communication from Anna University.
- (10) Gajakarnan Vibushanan Kandiah has been our Executive Vice President and President, Digital Business since August 2016. Mr. Kandiah previously served as Executive Vice President of Business Process Services ("BPS") and Digital Works from January 2014 to August 2016, and as Senior Vice President of BPS from 2011 to December 2013. Previous roles he held at

Cognizant included roles in System Integration, Testing, BPS, Information, Media and Entertainment, and Communications practices. Before joining Cognizant in 2003, Mr. Kandiah was a founder and the Chief Operating Officer of NerveWire, Inc. and the Global Vice President of the Interactive Solutions business of Cambridge Technology Partners. Mr. Kandiah completed his advanced level education at the Royal College in Sri Lanka.

- (11) Venkat Krishnaswamy has been our Vice Chairman, Healthcare and Life Sciences since May 2017. From December 2013 to May 2017, he served as our President of Healthcare and Life Sciences. From February 2012 to December 2013, Mr. Krishnaswamy served as our Executive Vice President of Healthcare and Life Sciences. Mr. Krishnaswamy served as our Senior Vice President and General Manager of Healthcare and Life Sciences from 2007 to 2012 and in various other management positions since he joined Cognizant in 1997. Prior to joining Cognizant, Mr. Krishnaswamy spent over ten years in retail and commercial banking with Colonial State Bank (now Commonwealth Bank of Australia). Mr. Krishnaswamy has a Bachelor of Engineering degree from the University of Madras and a Master of Electrical Engineering degree from the Indian Institute of Technology, New Delhi.
- (12) James Lennox has been our Executive Vice President, Chief People Officer since January 2016. Mr. Lennox previously served as our Senior Vice President, Chief People Officer from June 2013 to December 2016, and as Vice President, North America Human Resources ("HR") from July 2011 to June 2013. Previous roles he held at Cognizant included leading the Workforce Management team, Operations Director for our Banking and Insurance practices, leading regional HR teams, and serving as the Chief of Staff to the Company's Chief Executive Officer. Prior to joining Cognizant in 2004, Mr. Lennox held various management roles in operations, HR, resource management and recruiting for the North American regions of Cap Gemini and Ernst & Young. He started his career at Ernst & Young Consulting. Mr. Lennox has a Bachelor of Science degree in Business Administration from St. Thomas Aquinas College and an MBA degree from Fordham University.
- (13) Sean Middleton has been our Senior Vice President and President, Cognizant Accelerator since January 2017. He was previously Vice President and President, Cognizant Accelerator from July 2016 to January 2017. Mr. Middleton served as Chief Operating Officer of our Emerging Business Accelerator division from 2012 to July 2016 and as Chief of Staff to the Company's Chief Executive Officer from 2010 to 2013. Prior to joining Cognizant in 2010, Mr. Middleton worked at PricewaterhouseCoopers as a management consultant. Mr. Middleton has a Bachelor degree in Computer Science from Cornell University and an MBA degree from the Wharton School at the University of Pennsylvania.
- (14) Allen Shaheen has been our Executive Vice President, North American Digital Hubs since January 2018. He has also served as a director of the Cognizant U.S. Foundation, a non-profit organization, since April 2018. From August 2015 to December 2017, Mr. Shaheen was Executive Vice President, Corporate Development. From December 2013 to August 2016, Mr. Shaheen was also responsible for various Cognizant practices, including our Enterprise Application Services Practice. Mr. Shaheen was the General Manager for our German business unit from February 2013 to December 2014 and our Markets Delivery Leader for Europe from May 2012 to December 2014. Mr. Shaheen's prior roles included being responsible for our IT Infrastructure Services, head of our Global Technology Office and head of our Systems Integration and Testing practices. Prior to joining Cognizant in 2006, Mr. Shaheen was a consultant for Cognizant from 2004 to 2006, a founder and Executive Vice President of International Operations of Cambridge Technology Partners and the Chief Executive Officer of ArsDigita Corporation. Mr. Shaheen has a Bachelor of Arts degree in Engineering and Applied Sciences from Harvard College.
- (15) Dharmendra Kumar Sinha has been our Executive Vice President and President, Global Client Services since December 2013. He has also served as President and a director of the Cognizant U.S. Foundation, a non-profit organization, since April 2018. From 2007 to December 2013, Mr. Sinha served as our Senior Vice President and General Manager, Global Sales and Field Marketing. From 2004 to 2007, Mr. Sinha served as our Vice President, responsible for our Manufacturing and Logistics, Retail and Hospitality, and Technology verticals. From 1997 to 2004, Mr. Sinha held a variety of other management roles. Prior to joining Cognizant in 1997, Mr. Sinha worked with Tata Consultancy Services and CMC Limited, an IT solutions provider. Mr. Sinha has a Bachelor of Science degree from Patna Science College, Patna and an MBA degree from the Birla Institute of Technology, Mesra.
- (16) Robert Telesmanic has been our Senior Vice President, Controller and Chief Accounting Officer since January 2017, a Senior Vice President since 2010 and our Corporate Controller since 2004. Prior to that, he served as our Assistant Corporate Controller from 2003 to 2004. Prior to joining Cognizant, Mr. Telesmanic spent over 14 years with Deloitte & Touche LLP. Mr. Telesmanic has a Bachelor of Science degree from New York University and an MBA degree from Columbia University.
- (17) Santosh Thomas has been our Executive Vice President and President, Global Growth Markets since August 2016. Prior to his current role, Mr. Thomas served as our Head, Growth Markets from 2011 through July 2016. From 1999 to 2011, Mr. Thomas held various senior positions at Cognizant including leading Continental European operations and various roles in client relationships and market development in North America. Prior to joining Cognizant in 1999, Mr. Thomas worked with Informix and HCL Hewlett Packard Limited. Mr. Thomas has an undergraduate degree in engineering from RV College of Engineering, Bangalore and a Postgraduate Diploma in Business Management from the XLRI - Xavier School of Management in India.
- (18) Srinivasan Veeraraghavachary has been our Chief Operating Officer since August 2016. Prior to his current role, Mr. Veeraraghavachary served as our Executive Vice President, Products and Resources from December 2013 to November 2016 and as our Senior Vice President, Products and Resources from 2011 to December 2013. Previously, he served in various senior management positions in our BFS practice and in our central U.S. operations. Mr. Veeraraghavachary joined Cognizant

in 1998. Mr. Veeraraghavachary has a Bachelor degree in Mechanical Engineering from the National Institute of Technology (formerly the Regional Engineering College) in Trichy, India and an MBA degree from the Indian Institute of Management in Calcutta, India.

None of our executive officers is related to any other executive officer or to any of our Directors. Our executive officers are appointed annually by the Board of Directors and generally serve until their successors are duly appointed and qualified.

Corporate History

We began our IT development and maintenance services business in early 1994 as an in-house technology development center for The Dun & Bradstreet Corporation and its operating units. In 1996, we were spun-off from The Dun & Bradstreet Corporation and, in 1998, we completed an initial public offering to become a public company.

Available Information

We make available the following public filings with the Securities and Exchange Commission ("SEC") free of charge through our website at www.cognizant.com as soon as reasonably practicable after we electronically file such material with, or furnish such material to, the SEC:

- our Annual Reports on Form 10-K and any amendments thereto;
- our Quarterly Reports on Form 10-Q and any amendments thereto; and
- our Current Reports on Form 8-K and any amendments thereto.

In addition, we make available our code of ethics entitled "Core Values and Code of Ethics" free of charge through our website. We intend to post on our website all disclosures that are required by law or Nasdaq Stock Market listing standards concerning any amendments to, or waivers from, any provision of our code of ethics.

No information on our website is incorporated by reference into this Form 10-K or any other public filing made by us with the SEC.

Item 1A. Risk Factors

Factors That May Affect Future Results

We face various important risks and uncertainties, including those described below, that could adversely affect our business, results of operations and financial condition and, as a result, cause a decline in the trading price of our common stock.

Our results of operations could be adversely affected by economic and political conditions globally and in particular in the markets in which our customers and operations are concentrated.

Global macroeconomic conditions have a significant effect on our business as well as the businesses of our customers. Volatile, negative or uncertain economic conditions could cause our customers to reduce, postpone or cancel spending on projects with us and could make it more difficult for us to accurately forecast customer demand and have available the right resources to profitably address such customer demand. The short-term nature of contracts in our industry means that actions by customers may occur quickly and with little warning, which may cause us to incur extra costs where we have employed more professionals than customer demand supports.

Our business is particularly susceptible to economic and political conditions in the markets where our customers or operations are concentrated. Our revenues are highly dependent on customers located in the United States and Europe, and any adverse economic, political or legal uncertainties or adverse developments, including due to the anticipated exit of the United Kingdom from the European Union as a result of the 2016 United Kingdom referendum to exit the European Union (the "Brexit Referendum") may cause customers in these geographies to reduce their spending and materially adversely impact our business. Many of our customers are in the financial services and healthcare industries, so any decrease in growth or significant consolidation in these industries or regulatory policies that restrict these industries may reduce demand for our services. Economic and political developments in India, where a significant majority of our operations and technical professionals are located, or in other countries where we maintain delivery operations, may also have a significant impact on our business and costs of operations. As a developing country, India has experienced and may continue to experience high inflation and wage growth, fluctuations in gross domestic product growth and volatility in currency exchange rates, any of which could materially adversely affect our cost of operations. Additionally, we benefit from governmental policies in India that encourage foreign investment and promote the ease of doing business, such as tax incentives, and any change in policy or circumstances that results in the elimination of such benefits or degradation of the rule of law, or imposition of new adverse restrictions or costs on our operations could have a material adverse effect on our business, results of operations and financial condition.

If we are unable to attract, train and retain skilled professionals, including highly skilled technical personnel to satisfy customer demand and senior management to lead our business globally, our business and results of operations may be materially adversely affected.

Our success is dependent, in large part, on our ability to keep our supply of skilled professionals, including project managers, IT engineers and senior technical personnel, in balance with customer demand around the world and on our ability to attract and retain senior management with the knowledge and skills to lead our business globally. Each year, we must hire tens of thousands of new professionals and retrain, retain, and motivate our workforce of hundreds of thousands of professionals with diverse skills and expertise in order to serve customer demands across the globe, respond quickly to rapid and ongoing technological, industry and macroeconomic developments and grow and manage our business. We also must continue to maintain an effective senior leadership team. The loss of senior executives, or the failure to attract, integrate and retain new senior executives as the needs of our business require, could have a material adverse effect on our business and results of operations.

Competition for skilled labor is intense and, in some jurisdictions in which we operate, there are more jobs for IT professionals than qualified persons to fill these jobs. Our business has experienced significant employee attrition, which may cause us to incur increased costs to hire new professionals with the desired skills. Costs associated with recruiting and training professionals are significant. If we are unable to hire or deploy professionals with the needed skillsets or if we are unable to adequately equip our professionals with the skills needed, this could materially adversely affect our business. Additionally, if we are unable to maintain an employee environment that is competitive and contemporary, it could have an adverse effect on engagement and retention, which may materially adversely affect our business.

We face challenges related to growing our business organically as well as inorganically through acquisitions, and we may not be able to achieve our targeted growth rates.

Achievement of our targeted growth rates requires continued significant organic growth of our business as well as inorganic growth through acquisitions. To achieve such growth, we must, among other things, continue to significantly expand our global operations, increase our product and service offerings and scale our infrastructure to support such business growth. Continued business growth increases the complexity of our business and places significant strain on our management, personnel, operations, systems, technical performance, financial resources, and internal financial control and reporting functions, which we will have to continue to develop and improve to sustain such growth. We must continually recruit, train and retain technical, finance, marketing and management personnel with the knowledge, skills and experience that our business model requires and effectively manage our personnel worldwide to support our culture, values, strategies and goals. Additionally, we expect to continue pursuing strategic and targeted acquisitions, investments and joint ventures to enhance our offerings of services and solutions or to enable us to expand in certain geographic and other markets. We may not be successful in identifying suitable opportunities, completing targeted transactions or achieving the desired results, and such opportunities may divert our management's time and focus away from our core business. We may face challenges in effectively integrating acquired businesses into our ongoing operations and in assimilating and retaining employees of those businesses into our culture and organizational structure. If we are unable to manage our growth effectively, complete acquisitions of the number, magnitude and nature we have targeted, or successfully integrate any acquired businesses into our operations, we may not be able to achieve our targeted growth rates or improve our market share, profitability or competitive position generally or in specific markets or services.

We may not be able to achieve our profitability and capital return goals.

Our goals for profitability and capital return rely upon a number of assumptions, including our ability to improve the efficiency of our operations and make successful investments to grow and further develop our business. Our profitability depends on the efficiency with which we run our operations and the cost of our operations, especially the compensation and benefits costs of the professionals we employ. We may not be able to efficiently utilize our professionals if increased regulation, policy changes or administrative burdens of immigration, work visas or outsourcing prevents us from deploying our professionals globally on a timely basis, or at all, to fulfill the needs of our customers. Wage and other cost pressures may put pressure on our profitability. Fluctuations in foreign currency exchange rates can also have adverse effects on our revenues, income from operations and net income when items originally denominated in other currencies are translated or remeasured into U.S. dollars for presentation of our consolidated financial statements. We have entered into foreign exchange forward contracts intended to partially offset the impact of the movement of the exchange rates on future operating costs and to mitigate foreign currency risk on foreign currency denominated net monetary assets. However, the hedging strategies that we have implemented, or may in the future implement, to mitigate foreign currency exchange rate risks may not reduce or completely offset our exposure to foreign exchange rate fluctuations and may expose our business to unexpected market, operational and counterparty credit risks. We are particularly susceptible to wage and cost pressures in India and the exchange rate of the Indian rupee relative to the currencies of our customer contracts due to the fact that the substantial majority of our employees are in India while our contracts with customers are typically in the local currency of the country where our customers are located. If we are unable to improve the efficiency of our operations, our operating margin may decline and our business, results of operations and financial condition may be materially adversely affected. Failure to achieve our profitability goals could adversely affect our business, financial condition and results of operations.

With respect to capital return, our ability and decisions to pay dividends and repurchase shares consistent with our announced goals or at all depend on a variety of factors, including our cash flow generated from operations, the amount and geographic location of our cash and investment balances, our net income, our overall liquidity position, potential alternative uses of cash, such as acquisitions, and anticipated future economic conditions and financial results. Failure to achieve our capital return goals may adversely impact our reputation with shareholders and shareholders' perception of our business and the value of our common stock.

Our failure to meet specified service levels required by certain of our contracts may result in our contracts being less profitable, potential liability for penalties or damages or reputational harm.

Many of our contracts include clauses that tie our compensation to the achievement of agreed-upon performance standards or milestones. Failure to satisfy these measures could significantly reduce or eliminate our fees under the contracts, increase the cost to us of meeting performance standards or milestones, delay expected payments, subject us to potential damage claims under the contract terms or harm our reputation. Customers also often have the right to terminate a contract and pursue damage claims for serious or repeated failure to meet these service commitments. Some of our contracts provide that a portion of our compensation depends on performance measures such as cost-savings, revenue enhancement, benefits produced, business goals attained and adherence to schedule. These goals can be complex and may depend on our customers' actual levels of business activity or may be based on assumptions that are later determined not to be achievable or accurate. As such, these provisions may increase the variability in revenues and margins earned on those contracts.

We face intense and evolving competition in the rapidly changing markets we compete in.

The markets we serve and operate in are highly competitive, subject to rapid change and characterized by a large number of participants, as described in “Part I, Item 1. Business-Competition.” In addition to large, global competitors, we face competition from numerous smaller, local competitors in many geographic markets that may have more experience with operations in these markets, have well-established relationships with our desired customers, or be able to provide services and solutions at lower costs or on terms more attractive to customers than we can. Consolidation activity may also result in new competitors with greater scale, a broader footprint or vertical integration that makes them more attractive to customers as a single provider of integrated products and services. In addition, the short-term nature of contracts in our industry and the long-term concurrent use by many customers of multiple professional service providers means that we are required to be continually competitive on the quality, scope and pricing of our offerings or face a reduction or elimination of our business.

Our success depends on our ability to continue to develop and implement services and solutions that anticipate and respond to rapid and continuing changes in technology to serve the evolving needs of our customers. If we do not sufficiently invest in new technologies, successfully adapt to industry developments and changing demand, and evolve and expand our business at sufficient speed and scale to keep pace with the demands of the markets we serve, we may be unable to develop and maintain a competitive advantage and execute on our growth strategy, which would materially adversely affect our business, results of operations and financial condition.

Our relationships with our third party alliance partners, who supply us with necessary components to the services and solutions we offer our customers, are also critical to our ability to provide many of our services and solutions that address customer demands. There can be no assurance that we will be able to maintain such relationships. Among other things, such alliance partners may in the future decide to compete with us, form exclusive or more favorable arrangements with our competitors or otherwise reduce our access to their products impairing our ability to provide the services and solutions demanded by customers.

We face legal, reputational and financial risks if we fail to protect customer and/or Cognizant data from security breaches or cyberattacks.

In order to provide our services and solutions, we depend on global information technology networks and systems, including those of third parties, to process, transmit, host and securely store electronic information (including our confidential information and the confidential information of our customers) and to communicate among our locations around the world and with our customers, suppliers and partners. Security breaches, employee malfeasance, or human or technological error could lead to shutdowns or disruptions of our operations and potential unauthorized disclosure of our or our customers’ sensitive data, which in turn could jeopardize projects that are critical to our operations or the operations of our customers’ businesses. Like other global companies, we and the businesses we interact with have experienced threats to data and systems, including by perpetrators of random or targeted malicious cyberattacks, computer viruses, malware, worms, bot attacks or other destructive or disruptive software and attempts to misappropriate customer information and cause system failures and disruptions.

A security compromise of our information systems or of those of businesses with whom we interact that results in confidential information being accessed by unauthorized or improper persons could harm our reputation and expose us to regulatory actions, customer attrition, remediation expenses, disruption of our business, and claims brought by our customers or others for breaching contractual confidentiality and security provisions or data protection laws. Monetary damages imposed on us could be significant and not covered by our liability insurance. Techniques used by bad actors to obtain unauthorized access, disable or degrade service, or sabotage systems evolve frequently and may not immediately produce signs of intrusion, and we may be unable to anticipate these techniques or to implement adequate preventative measures. In addition, a security breach could require that we expend substantial additional resources related to the security of our information systems, diverting resources from other projects and disrupting our businesses. If we experience a data security breach, our reputation could be damaged and we could be subject to additional litigation, regulatory risks and business losses.

We are required to comply with increasingly complex and changing data security and privacy regulations in the United States, the European Union and in other jurisdictions in which we operate that regulate the collection, use and transfer of personal data, including the transfer of personal data between or among countries. In the United States, for example, the Health Insurance Portability and Accountability Act imposes extensive privacy and security requirements governing the transmission, use and disclosure of protected health information by participants in the health care industry. The European Union’s General Data Protection Regulation, which became effective in May 2018, imposes new compliance obligations regarding the handling of personal data and has significantly increased financial penalties for noncompliance. Additionally, the Digital Information Security in Healthcare Act is under consideration in India, which proposed legislation includes significant penalties related to disclosure of healthcare data. Other countries have enacted or are considering enacting data localization laws that require certain data to stay within their borders. We may also face audits or investigations by one or more domestic or foreign government agencies or our customers pursuant to our contractual obligations relating to our compliance with these regulations. Complying with changing regulatory

requirements requires us to incur substantial costs, exposes us to potential regulatory action or litigation, and may require changes to our business practices in certain jurisdictions, any of which could materially adversely affect our business operations and operating results.

If our business continuity and disaster recovery plans are not effective and our global delivery capability is impacted, our business and results of operations may be materially adversely affected and we may suffer harm to our reputation.

Our business model is dependent on our global delivery capability, which includes coordination between our main operating offices in India, our other global delivery centers, the offices of our customers and our associates worldwide. System failures, outages and operational disruptions may be caused by factors outside of our control such as hostilities, political unrest, terrorist attacks, natural disasters or pandemics affecting the geographies where our operations and transmission equipment is located. Our business continuity and disaster recovery plans may not be effective at preventing or mitigating the effects of such disruptions, particularly in the case of a catastrophic event. Any such disruption may result in lost revenues, a loss of customers and reputational damage, which would have an adverse effect on our business, results of operations and financial condition.

A substantial portion of our employees in the United States, United Kingdom, European Union and other jurisdictions rely on visas to work in those areas such that any restrictions on such visas or immigration more generally may affect our ability to compete for and provide services to customers in these jurisdictions, which could materially adversely affect our business, results of operations and financial condition.

A substantial portion of our employees in the United States and in many other jurisdictions, including countries in Europe, rely upon temporary work authorization or work permits, which makes our business particularly vulnerable to changes and variations in immigration laws and regulations, including written changes and policy changes to the manner in which the laws and regulations are interpreted or enforced. The political environment in the United States, the United Kingdom and other countries in recent years has included significant support for anti-immigrant legislation and administrative changes. Many of these recent changes have made it more difficult to obtain timely visas and increased the costs of obtaining visas. The governments of these countries may also tighten adjudication standards for labor market tests. For example, in the United States, the current administration has implemented policy changes to increase scrutiny of the issuance of new and the renewal of existing H-1B visa applications and the placement of H-1B visa workers on third party worksites, and has issued executive orders designed to limit immigration. Recently, there has been an increase in the number of visa application rejections and delays in processing such applications. This has affected and may continue to affect our ability to timely obtain visas and staff projects. Additionally, many countries in the European Union ("EU") continue to implement new regulations to move into compliance with the EU Directive of 2014 to harmonize immigration rules for intracompany transferees in most EU member states and to facilitate the transfer of managers, specialists and graduate trainees both into and within the region. The changes have had significant impacts on mobility programs and have led to new notification and documentation requirements for companies sending professionals to EU countries. Recent changes or any additional adverse revisions to immigration laws and regulations in the jurisdictions in which we operate may cause us delays, staffing shortages, additional costs or an inability to bid for or fulfill projects for customers, any of which could have a material adverse effect on our business, results of operations and financial condition.

Anti-outsourcing legislation, if adopted, and negative perceptions associated with offshore outsourcing could impair our ability to serve our customers and materially adversely affect our business, results of operations and financial condition.

The practice of outsourcing services to organizations operating in other countries is a topic of political discussion in the United States, which is our largest market, as well as other regions in which we have customers. For example, measures aimed at limiting or restricting outsourcing by U.S. companies have been put forward for consideration by the U.S. Congress and in state legislatures to address concerns over the perceived association between offshore outsourcing and the loss of jobs domestically. If any such measure is enacted, our ability to provide services to our customers could be impaired.

In addition, from time to time there has been publicity about purported negative experiences associated with offshore outsourcing, such as alleged domestic job loss and theft and misappropriation of sensitive customer data, particularly involving service providers in India. Current or prospective customers may elect to perform certain services themselves or may be discouraged from utilizing global service delivery providers like us due to negative perceptions that may be associated with using global service delivery models or firms. Any slowdown or reversal of existing industry trends toward global service delivery would seriously harm our ability to compete effectively with competitors that provide the majority of their services from within the country in which our customers operate.

We are subject to numerous and evolving legal and regulatory requirements in the many jurisdictions in which we operate, and violations of or unfavorable changes in such requirements could harm our business.

We provide services to customers and have operations in many parts of the world and in a wide variety of different industries, subjecting us to numerous, and sometimes conflicting, laws and regulations on matters as diverse as import and export controls,

temporary work authorizations or work permits, content requirements, trade restrictions, tariffs, taxation, anti-corruption laws (including the U.S. Foreign Corrupt Practices Act ("FCPA") and the U.K. Bribery Act), government affairs, internal and disclosure control obligations, data privacy, intellectual property and labor relations. We are subject to a wide range of potential enforcement actions, audits or investigations regarding our compliance with these laws or regulations in the conduct of our business, and any finding of a violation could subject us to a wide range of civil or criminal penalties, including fines, debarment, or suspension or disqualification from government contracting, prohibitions or restrictions on doing business, loss of customers and business, legal claims by customers and damage to our reputation.

We face significant regulatory compliance costs and risks as a result of the size and breadth of our business. For example, we commit significant financial and managerial resources to comply with our internal control over financial reporting requirements, but we have in the past and may in the future identify material weaknesses or deficiencies in our internal control over financial reporting that causes us to incur incremental remediation costs in order to maintain adequate controls. As another example, we had to spend significant resources on conducting an internal investigation and cooperating with investigations by the U.S. Department of Justice ("DOJ") and the SEC, each of which is now concluded, focused on whether certain payments relating to Company-owned facilities in India were made in violation of the FCPA and other applicable laws.

Changes in tax laws or in their interpretation or enforcement, failure by us to adapt our corporate structure and intercompany arrangements to achieve global tax efficiencies or adverse outcomes of tax audits, investigations or proceedings could have a material adverse effect on our effective tax rate, results of operations and financial condition.

The interpretation of tax laws and regulations in the many jurisdictions in which we operate and the related tax accounting principles are complex and require considerable judgment to determine our income taxes and other tax liabilities worldwide. Tax laws and regulations affecting us and our customers, including applicable tax rates, and the interpretation and enforcement of such laws and regulations are subject to change as a result of economic, political and other factors, and any such changes or changes in tax accounting principles could increase our effective worldwide income tax rate and have a material adverse effect on our net earnings and financial condition. We routinely review and update our corporate structure and intercompany arrangements, including transfer pricing policies, consistent with applicable laws and regulations, to align with our evolving business operations and provide global tax efficiencies across the numerous jurisdictions, such as the United States, India and the United Kingdom, in which we operate. Failure to successfully adapt our corporate structure and intercompany arrangements to align with our evolving business operations and achieve global tax efficiencies may increase our worldwide effective tax rate and have a material adverse effect on our earnings and financial condition. For example, the Tax Cuts and Jobs Reform Act ("Tax Reform Act") was enacted in December 2017 and made a number of significant changes to the corporate tax regime in the United States. Among other things, the Tax Reform Act introduced two new minimum taxes: the "base erosion anti-abuse tax" which requires U.S. corporations to make an alternative determination of taxable income without regard to tax deductions for certain payments to non-U.S. affiliates, and a tax on certain earnings of non-U.S. subsidiaries considered to be "global intangible low taxed income". In addition, the Organization for Economic Co-operation and Development recently published the Base Erosion and Profit Shifting action plans that are being adopted and implemented in various forms by countries where we do business. Our worldwide effective income tax rate may increase as a result of these recent developments, changes in interpretations and assumptions made and additional guidance that may be issued, and the successful implementation of ongoing and future actions the Company has or may take with respect to our corporate structure and intercompany arrangements.

Additionally, we are subject from time to time to tax audits, investigations and proceedings. Tax authorities have disagreed, and may in the future disagree, with our judgments, and are taking increasingly aggressive positions, including with respect to our intercompany transactions. For example, we are currently involved in an ongoing dispute with the Indian Income Tax Department ("ITD") in which the ITD asserts that we owe additional taxes for two transactions by which our principal operating subsidiary in India ("CTS India") repurchased shares from its shareholders, as more fully described in [Note 11](#) to the consolidated financial statements. Adverse outcomes in any such audits, investigations or proceedings could increase our tax exposure and cause us to incur increased expense, which could materially adversely affect our results of operations and financial condition.

Our business subjects us to considerable potential exposure to litigation and legal claims and could be materially adversely affected if we incur legal liability.

We are subject to, and may become a party to, a variety of litigation or other claims and suits that arise from time to time in the conduct of our business. Our business is subject to the risk of litigation involving current and former employees, clients, alliance partners, subcontractors, suppliers, competitors, shareholders, government agencies or others through private actions, class actions, whistleblower claims, administrative proceedings, regulatory actions or other litigation. While we maintain insurance for certain potential liabilities, such insurance does not cover all types and amounts of potential liabilities and is subject to various exclusions as well as caps on amounts recoverable.

Our customer engagements expose us to significant potential legal liability and litigation expense if we fail to meet our contractual obligations or otherwise breach obligations to third parties or if our subcontractors breach or dispute the terms of our agreements with them and impede our ability to meet our obligations to our customers. For example, third parties could claim that we or our customers, whom we typically contractually agree to indemnify with respect to the services and solutions we provide, infringe upon their intellectual property rights. Any such claims of intellectual property infringement could harm our reputation, cause us to incur substantial costs in defending ourselves, expose us to considerable legal liability or prevent us from offering some services or solutions in the future. We may have to engage in legal action to protect our own intellectual property rights, and enforcing our rights may require considerable time, money and oversight, and existing laws in the various countries in which we provide services or solutions may offer only limited protection.

We also face considerable potential legal liability from a variety of other sources. Our acquisition activities have in the past and may in the future be subject to litigation or other claims, including claims from professionals, customers, stockholders, or other third parties. We have also been the subject of a number of putative securities class action complaints and putative shareholder derivative complaints relating to the matters that were the subject of our now concluded internal investigation into potential violations of the FCPA and other applicable laws, and may be subject to such legal actions for these or other matters in the future. See "[Part I, Item 3. Legal Proceedings](#)" for more information. We establish reserves for these and other matters when a loss is considered probable and the amount can be reasonably estimated; however, the estimation of legal reserves and possible losses involves significant judgment and may not reflect the full range of uncertainties and unpredictable outcomes inherent in litigation, and the actual losses arising from particular matters may exceed our estimates and materially adversely affect our results of operations.

Our earnings may be adversely affected if we change our intent not to repatriate Indian accumulated undistributed earnings.

A significant portion of our accumulated earnings are held and ongoing earnings are derived from our operations in India. We consider our Indian accumulated undistributed earnings to be indefinitely reinvested in India. While we have no plans to do so, we may change our intent not to repatriate such earnings, including as a result of capital requirements in other parts of our business that may necessitate such repatriation. As of December 31, 2018, the amount of unrepatriated Indian earnings was estimated at approximately \$4,679 million. If all of our accumulated unrepatriated Indian earnings were to be repatriated, based on our current interpretation of India tax law, we estimate that we would incur an additional income tax expense of approximately \$980 million. This estimate is subject to change based on legislative developments in India and other jurisdictions as well as judicial and interpretive developments of applicable tax laws.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

We have major sales and marketing offices, innovation labs, and digital design and consulting centers in major business markets, including New York, London, Paris, Melbourne, Singapore, and Sao Paulo, among others, which are used to deliver services to our customers across all four of our business segments. We lease 0.1 million square feet of office space for our worldwide headquarters in Teaneck, NJ. In total, we have offices and operations in more than 74 cities in 37 countries around the world.

We utilize a global delivery model with delivery centers worldwide, including in-country, regional and global delivery centers. We have over 26 million square feet of owned and leased facilities for our delivery centers. Our largest delivery center presence is in India: Chennai (10 million square feet); Pune (4 million square feet); Kolkata (3 million square feet); Bangalore (2 million square feet); and Hyderabad (2 million square feet). Our India delivery centers represent more than two-thirds of our total delivery centers on a square-foot basis. We also have a significant number of delivery centers in other countries, including the United States, Philippines, Canada, Mexico and countries throughout Europe.

We believe our current facilities are adequate to support our operations in the immediate future, and that we will be able to obtain suitable additional facilities on commercially reasonable terms as needed.

Item 3. Legal Proceedings

See [Note 15](#) to our consolidated financial statements.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities

Our Class A common stock trades on the Nasdaq Global Select Market ("Nasdaq") under the symbol "CTSH". As of December 31, 2018, the approximate number of holders of record of our Class A common stock was 125 and the approximate number of beneficial holders of our Class A common stock was 376,500.

Cash Dividends

During 2018, we paid a quarterly cash dividend of \$0.20 per share. Beginning in 2019, our new capital return plan anticipates the deployment of approximately 50% of our global free cash flow¹ for dividends and share repurchases and approximately 25% of our global free cash flow¹ for acquisitions, as needed. Accordingly, we intend to continue to pay quarterly cash dividends during 2019. Our ability and decisions to pay future dividends depend on a variety of factors, including our cash flow generated from operations, the amount and location of our cash and investment balances, our net income, our overall liquidity position, potential alternative uses of cash, such as acquisitions, and anticipated future economic conditions and financial results.

Issuer Purchases of Equity Securities

In November 2018, the Board of Directors approved an amendment to our stock repurchase program. Under our stock repurchase program, as amended, we are authorized to repurchase \$5.5 billion, excluding fees and expenses, of our Class A common stock through open market purchases, including under a trading plan adopted pursuant to Rule 10b5-1 of the Securities Exchange Act of 1934, as amended, or in private transactions, including through accelerated stock repurchase agreements entered into with financial institutions, in accordance with applicable federal securities laws through December 31, 2020. The timing of repurchases and the exact number of shares to be purchased are determined by management, in its discretion, or pursuant to a Rule 10b5-1 trading plan, and will depend upon market conditions and other factors.

As of December 31, 2018, the remaining available balance under the Board of Directors' authorized stock repurchase program was \$2.5 billion. The stock repurchase activity under our stock repurchase program during the fourth quarter of 2018 was as follows:

Month	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased under the Plans or Programs (in millions)
October 1, 2018 - October 31, 2018				
Open market purchases	1,649,171	\$ 71.56	1,649,171	\$ 657
November 1, 2018 - November 30, 2018				
Open market purchases	1,175,683	69.70	1,175,683	2,575
December 1, 2018 - December 31, 2018				
Open market purchases	776,935	64.34	776,935	2,525
Total	<u>3,601,789</u>	\$ 69.39	<u>3,601,789</u>	

We regularly purchase shares in connection with our stock-based compensation plans as shares of our Class A common stock are tendered by employees for payment of applicable statutory tax withholdings. For the three months ended December 31, 2018, we purchased 234,127 shares at an aggregate cost of \$17 million in connection with employee tax withholding obligations.

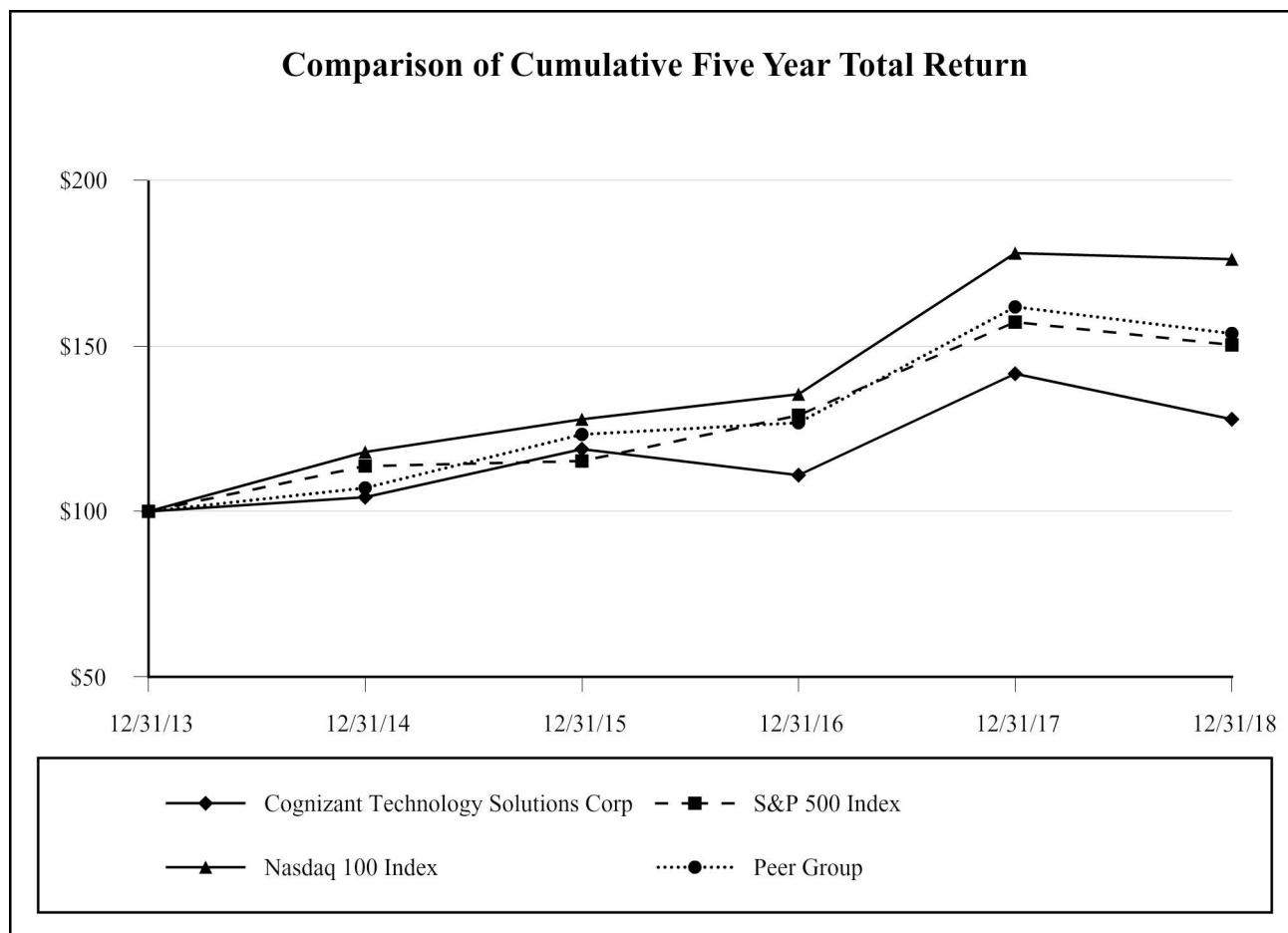
For information on all of our share repurchases for the three years ended December 31, 2018 and further discussion of our share repurchase activity, see [Note 14](#) to our consolidated financial statements.

¹ Free cash flow is not a measurement of financial performance prepared in accordance with accounting principles generally accepted in the United States of America ("GAAP"). See "Non-GAAP Financial Measures" in [Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations](#) for more information.

Performance Graph

The following graph compares the cumulative total stockholder return on our Class A common stock with the cumulative total return on the S&P 500 Index, Nasdaq-100 Index and a Peer Group Index (capitalization weighted) for the period beginning December 31, 2013 and ending on the last day of our last completed fiscal year. The stock performance shown on the graph below is not indicative of future price performance.

**COMPARISON OF CUMULATIVE TOTAL RETURN⁽¹⁾⁽²⁾
Among Cognizant, the S&P 500 Index, the Nasdaq-100 Index
And a Peer Group Index⁽³⁾ (Capitalization Weighted)**



Company / Index	Base Period					
	12/31/13	12/31/14	12/31/15	12/31/16	12/31/17	12/31/18
Cognizant Technology Solutions Corp	\$ 100	\$ 104.30	\$ 118.88	\$ 110.97	\$ 141.57	\$ 127.87
S&P 500 Index	100	113.69	115.26	129.05	157.22	150.33
Nasdaq-100	100	117.94	127.88	135.40	178.07	176.22
Peer Group	100	107.07	123.24	126.80	161.82	153.76

- (1) Graph assumes \$100 invested on December 31, 2013 in our Class A common stock, the S&P 500 Index, the Nasdaq-100 Index, and the Peer Group Index (capitalization weighted).
- (2) Cumulative total return assumes reinvestment of dividends.
- (3) We have constructed a Peer Group Index of other information technology consulting firms. Our peer group consists of Accenture plc., DXC Technology, EPAM Systems Inc., ExlService Holdings Inc., Genpact Limited, Infosys Ltd., Wipro Ltd. and WNS (Holdings) Limited. In 2018, we elected to change the composition of our peer group. We removed Syntel Inc., as it is no longer a publicly traded company, and added EPAM Systems, Inc. as they are a peer information technology services firm. The total return for the former peer group is not presented separately as it is not materially different from the new peer group information.

Item 6. Selected Financial Data

The following table sets forth our selected consolidated historical financial data as of the dates and for the periods indicated. Our selected consolidated financial data set forth below as of December 31, 2018 and 2017 and for each of the years ended December 31, 2018, 2017 and 2016 have been derived from the audited consolidated financial statements included elsewhere herein. Our selected consolidated financial data set forth below as of December 31, 2016, 2015 and 2014 and for each of the years ended December 31, 2015 and 2014 are derived from our consolidated financial statements not included elsewhere herein. Our selected consolidated financial information for 2018, 2017 and 2016 should be read in conjunction with the consolidated financial statements and the accompanying notes and Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations, which are included elsewhere in this Annual Report on Form 10-K.

	2018 ⁽¹⁾	2017	2016	2015	2014
	(in millions, except per share data)				
For the year ended December 31:					
Revenues	\$ 16,125	\$ 14,810	\$ 13,487	\$ 12,416	\$ 10,263
Income from operations	2,801	2,481	2,289	2,142	1,885
Net income ⁽²⁾	2,101	1,504	1,553	1,624	1,439
Basic earnings per share ⁽²⁾	\$ 3.61	\$ 2.54	\$ 2.56	\$ 2.67	\$ 2.37
Diluted earnings per share ⁽²⁾	\$ 3.60	\$ 2.53	\$ 2.55	\$ 2.65	\$ 2.35
Cash dividends declared per common share	\$ 0.80	\$ 0.45	\$ —	\$ —	\$ —
Weighted average number of common shares outstanding-Basic	582	593	607	609	608
Weighted average number of common shares outstanding-Diluted	584	595	610	613	613
As of December 31:					
Cash, cash equivalents and short-term investments ⁽³⁾	\$ 4,511	\$ 5,056	\$ 5,169	\$ 4,949	\$ 3,775
Working capital ⁽³⁾	5,900	6,272	6,182	5,195	3,829
Total assets ⁽³⁾	15,913	15,221	14,262	13,061	11,473
Total debt	745	873	878	1,283	1,632
Stockholders' equity	11,424	10,669	10,728	9,278	7,740

- (1) On January 1, 2018, we adopted Accounting Standards Codification ("ASC") Topic 606, "Revenue from Contracts with Customers" ("New Revenue Standard") using the modified retrospective method. Results for reporting periods beginning on or after January 1, 2018 are presented under the New Revenue Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting policies. During 2018, the adoption of the New Revenue Standard had a positive impact on revenue of \$96 million, income from operations of \$134 million and diluted earnings per share of \$0.19 per share. See Note 3 to our consolidated financial statements for additional information.
- (2) In March 2016, the Financial Accounting Standards Board ("FASB") issued an update related to stock compensation. The update simplified the accounting for excess tax benefits and deficiencies related to employee stock-based payment transactions. We adopted this standard prospectively on January 1, 2017. For the years ended December 31, 2018 and 2017, we recognized net excess tax benefits on stock-based compensation awards in our income tax provision in the amount of \$20 million or \$0.03 per share and \$40 million or \$0.07 per share, respectively. In prior periods, such net excess tax benefits were recorded in additional paid in capital.
- (3) Includes \$423 million in restricted time deposits as of December 31, 2018. See Note 11 in our consolidated financial statements.

Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations

Executive Summary

Cognizant is one of the world’s leading professional services companies, transforming clients’ business, operating and technology models for the digital era. Our industry-based, consultative approach helps customers envision, build and run more innovative and efficient businesses. Our services include digital services and solutions, consulting, application development, systems integration, application testing, application maintenance, infrastructure services and business process services. Digital services are becoming an increasingly important part of our portfolio of services and solutions and are often integrated or delivered along with our other services. We tailor our services and solutions to specific industries and use an integrated global delivery model that employs customer service teams based at customer locations and delivery teams located at customer locations and dedicated global and regional delivery centers.

In 2018, we executed on our strategy to grow revenues and expand operating margins while completing our previously announced capital return plan. Revenues for the year ended December 31, 2018 increased to \$16,125 million from \$14,810 million for the year ended December 31, 2017, representing growth of 8.9%, or 8.5% on a constant currency basis¹. Going forward, we expect to continue to invest in our digital capabilities, including the extensive training and re-skilling of our technical teams and the expansion of our local workforces in the United States and other markets around the world. We expect these investments to contribute significantly to our organic revenue growth. Additionally, we plan to supplement our organic growth through select strategic acquisitions, joint ventures, investments and alliances that can expand our digital capabilities, geographic footprint or industry capabilities. In 2018, we completed five acquisitions: Bolder Healthcare Solutions ("Bolder"), a provider of revenue cycle management solutions to the healthcare industry in the United States; Hedera Consulting, a business advisory and data analytics service provider in Belgium and the Netherlands; Softvision, a digital engineering and consulting company with significant operations in Romania and India that focuses on agile development of custom cloud-based software and platforms for customers primarily in the United States; ATG, a United States based consulting company that helps companies plan, implement, and optimize automated cloud-based quote-to-cash business processes and technologies; and SaaSfocus, a Salesforce services provider in Australia.

We are focused on driving margin enhancement while continuing to invest in our business. In 2018, our operating margin increased to 17.4% as compared to 16.8% in 2017, as we continued to target higher margin digital services customer contracts and improve our cost structure through our realignment program and other margin enhancement initiatives, primarily by optimizing our resource pyramid, improving utilization and containing our corporate spend.

As part of our capital return plan, we returned \$3.7 billion to our stockholders through share repurchases and dividend payments over the two years ended December 31, 2018, exceeding our previously announced target of \$3.4 billion as shown below.

	2017 Capital Return Plan		
	2018	2017	Total
	(in millions)		
Dividends paid ⁽¹⁾	\$ 468	\$ 265	\$ 733
Share repurchases under our Board authorized stock repurchase plan	1,175	1,800	2,975
Total	<u>\$ 1,643</u>	<u>\$ 2,065</u>	<u>\$ 3,708</u>

(1) In 2018, we paid quarterly dividends of \$0.20 per share. In 2017, we paid quarterly dividends of \$0.15 per share for the quarters ended June 30, September 30 and December 31, 2017.

Beginning in 2019, our new capital return plan anticipates the deployment of approximately 50% of our global free cash flow¹ for dividends and share repurchases and approximately 25% of our global free cash flow¹ for acquisitions, as needed. For the year ended December 31, 2018, our cash flows from operating activities were \$2,592 million while our global free cash flow¹ was \$2,215 million. We review our capital return plan on an on-going basis, considering our financial performance and liquidity position, investments required to execute our strategic plans and initiatives, acquisition opportunities, the economic outlook, regulatory changes and other relevant factors. As these factors may change over time, the actual amounts expended on stock repurchase activity, dividends and acquisitions, if any, during any particular period cannot be predicted and may fluctuate from time to time.

¹ Constant currency revenue growth and free cash flow are not measurements of financial performance prepared in accordance with GAAP. See “Non-GAAP Financial Measures” for more information and a reconciliation to the most directly comparable GAAP financial measures, as applicable.

In 2018, we announced a plan to modify our non-GAAP financial measures. Our historical non-GAAP financial measures, non-GAAP operating margin², non-GAAP income from operations² and non-GAAP diluted earnings per share² ("non-GAAP diluted EPS")², excluded stock-based compensation expense, acquisition-related charges and unusual items, and our non-GAAP diluted EPS² additionally excluded net non-operating foreign currency exchange gains or losses and the tax impacts of all applicable adjustments. Our new non-GAAP financial measures, Adjusted Operating Margin², Adjusted Income From Operations² and Adjusted Diluted Earnings Per Share² ("Adjusted Diluted EPS")², exclude only unusual items and Adjusted Diluted EPS² additionally excludes net non-operating foreign currency exchange gains or losses and the tax impact of all applicable adjustments. We are also introducing two new non-GAAP financial measures, free cash flow² and constant currency revenue growth². Free cash flow² is defined as cash flow from operating activities net of purchases of property and equipment. Constant currency revenue growth² is defined as revenues for a given period restated at the comparative period's foreign currency exchange rates measured against the comparative period's reported revenues. See "Non-GAAP Financial Measures" for more information.

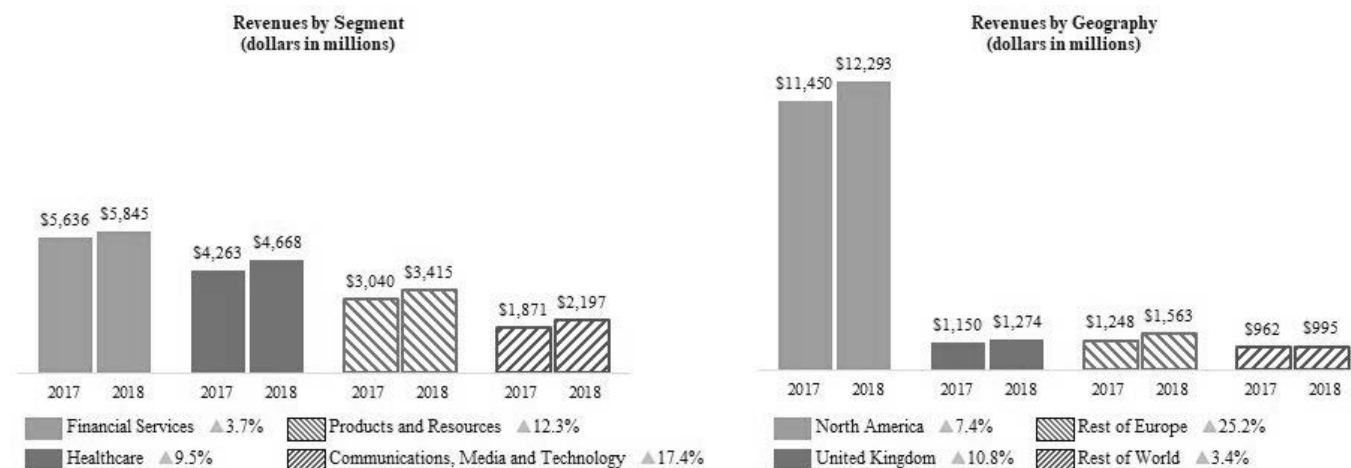
2018 Financial Results

The following table sets forth a summary of our financial results for the years ended December 31, 2018 and 2017:

			Increase	
	2018 ⁽¹⁾	2017	\$	%
(Dollars in millions, except per share data)				
Revenues	\$ 16,125	\$ 14,810	\$ 1,315	8.9
Income from operations	2,801	2,481	320	12.9
Net income	2,101	1,504	597	39.7
Diluted earnings per share	3.60	2.53	1.07	42.3
<i>Other Financial Information²</i>				
Non-GAAP income from operations	\$ 3,345	\$ 2,912	\$ 433	14.9
Adjusted Income From Operations	2,920	2,553	367	14.4
Non-GAAP diluted EPS	4.57	3.77	0.80	21.2
Adjusted Diluted EPS	4.02	3.42	0.60	17.5

- (1) On January 1, 2018, we adopted the New Revenue Standard using the modified retrospective method. Results for reporting periods beginning on or after January 1, 2018 are presented under the New Revenue Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting policies. During 2018, the adoption of the New Revenue Standard had a positive impact on revenue of \$96 million, income from operations of \$134 million and diluted earnings per share of \$0.19 per share. See [Note 3](#) to our consolidated financial statements for additional information.

The following charts set forth revenues and revenue growth by business segment and geography for the years ended December 31, 2017 and 2018:

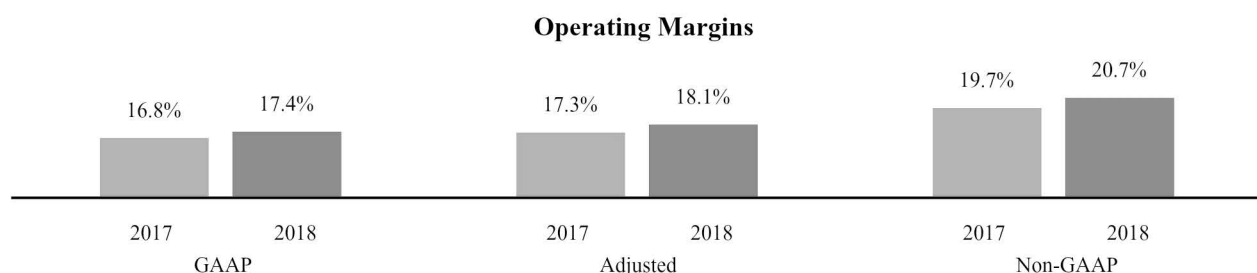


² Non-GAAP income from operations, Adjusted Income From Operations, non-GAAP operating margin, Adjusted Operating Margin, non-GAAP diluted EPS, Adjusted Diluted EPS, free cash flow and constant currency revenue growth are not measurements of financial performance prepared in accordance with GAAP. See "Non-GAAP Financial Measures" for more information and reconciliations to the most directly comparable GAAP financial measures, as applicable.

The following factors impacted our revenue growth during the year ended December 31, 2018 as compared to the year ended December 31, 2017:

- Solid performance in our Communications, Media and Technology, Products and Resources and Healthcare segments;
- Revenues in our Financial Services segment grew below Company average as certain banking customers continue to optimize the cost of supporting their legacy systems and operations, including moving a portion of their services to captives, as they shift their spend to transformation and digital services;
- Sustained strength in the North American market;
- Revenues from our customers in Europe grew 18.3%, or 15.2% on a constant currency³ basis;
 - Revenues from our Rest of Europe customers increased 25.2%, or 22.2% on a constant currency basis³;
 - Revenues from our United Kingdom customers increased 10.8%, or 7.6% on a constant currency basis³. Revenue growth in the United Kingdom continues to be negatively affected by weakness in the banking sector in that region;
- Revenues from our customers in our Rest of World region grew 3.4%, or 6.1% on a constant currency basis³;
- Increased customer spending on discretionary projects;
- Expansion of our service offerings, including consulting and digital services, next-generation IT solutions and platform-based solutions;
- Continued expansion of the market for global delivery of technology and business process services; and
- Increased penetration of existing customers.

The following chart sets forth our GAAP operating margin, Adjusted Operating Margin³ and non-GAAP operating margin³ for the years ended December 31, 2017 and 2018:



The increases in our GAAP operating margin, Adjusted Operating Margin³ and non-GAAP operating margin³ were attributable to our margin enhancement initiatives, which targeted the optimization of our resource pyramid, improvement of utilization and the containment of our corporate spend, as well as the depreciation of the Indian Rupee against the U.S. dollar, net of lower gains on settlement of our cash flow hedges in 2018 compared to 2017. Our GAAP operating margin was negatively impacted by the initial funding of the Cognizant U.S. Foundation. Our GAAP operating margin and our Adjusted Operating Margin were both negatively impacted by the increase in amortization expense due to recent acquisitions.

In 2017, the United States enacted the Tax Cuts and Jobs Act ("Tax Reform Act") which significantly revised the U.S. corporate income tax law for tax years beginning after December 31, 2017. As a result of this enactment, in 2017, we recorded a one-time provisional net income tax expense of \$617 million. During 2018, we recognized a \$5 million reduction to the provision for income taxes as we finalized our calculation of this one-time net income tax expense, bringing the one-time cost to \$612 million. Our effective income tax rate for 2018 was 25.0% as compared to 43.4% in 2017. The decrease in our effective tax rate in 2018 was primarily driven by the one-time net income tax expense of \$617 million that was recorded in 2017 as a result of the enactment of the Tax Reform Act and the reduction of the U.S. federal statutory corporate income tax rate in 2018 from 35% to 21%.

³ Constant currency revenue growth, non-GAAP operating margin and Adjusted Operating Margin are not measurements of financial performance prepared in accordance with GAAP. See "Non-GAAP Financial Measures" for more information and reconciliations to the most directly comparable GAAP financial measures.

Other Matters

We are involved in an ongoing dispute with the Indian Income Tax Department ("ITD") in connection with which we received a notice in March 2018 asserting that the ITD is owed additional taxes on our previously disclosed 2016 India Cash Remittance, which was the transaction undertaken by our principal operating subsidiary in India ("CTS India") to repurchase shares from its shareholders, which are non-Indian Cognizant entities, valued at \$2.8 billion. As a result of that transaction, undertaken pursuant to a plan approved by the Madras High Court in Chennai, India, we previously paid \$135 million in Indian income taxes, which we believe are all the applicable taxes owed for this transaction under Indian law. The ITD is asserting that we owe an additional 33 billion Indian rupees (\$475 million at the December 31, 2018 exchange rate) related to the 2016 India Cash Remittance. In addition to the dispute on the 2016 India Cash Remittance, we are involved in another ongoing dispute with the ITD relating to a 2013 transaction undertaken by CTS India to repurchase shares from its shareholders valued at \$523 million (the two disputes collectively referred to as the "ITD Dispute"), for which we also believe we have paid all applicable taxes owed. Accordingly, we have not recorded any reserves for these matters as of December 31, 2018. The ITD Dispute is currently pending before the Madras High Court, and no final decision has been reached. While we believe that we have paid all applicable taxes related to the transactions underlying the ITD Dispute, if it is ultimately determined that we are liable for the full amount of additional taxes the ITD alleges we owe, there could be a material adverse effect on our results of operations, cash flows and financial condition.

In March 2018, the ITD placed an attachment on certain of our India bank accounts, relating to the 2016 India Cash Remittance. In April 2018, the Madras High Court granted our application for a stay of the actions of the ITD and lifted the ITD's attachment of our bank accounts. As part of the interim stay order, we have deposited 5 billion Indian rupees (\$71 million at the December 31, 2018 exchange rate), representing 15% of the disputed tax amount related to the 2016 India Cash Remittance, with the ITD. This amount is presented in "Other current assets" on our consolidated statement of financial position. In addition, the court has placed a lien on certain time deposits of CTS India in the amount of 28 billion Indian rupees (\$404 million at the December 31, 2018 exchange rate), which is the remainder of the disputed tax amount related to the 2016 India Cash Remittance. The affected time deposits are considered restricted assets and we have reported them in "Short-term investments" on our consolidated statement of financial position. As of December 31, 2018, the restricted time deposits balance was \$423 million, including accumulated interest.

In February 2019, we completed our internal investigation focused on whether certain payments relating to Company-owned facilities in India were made improperly and in violation of the U.S. Foreign Corrupt Practices Act ("FCPA") and other applicable laws. The investigation was conducted under the oversight of the Audit Committee, with the assistance of outside counsel. During the year ended December 31, 2016, we recorded out-of-period corrections related to \$4 million of potentially improper payments between 2009 and 2016 that had been previously capitalized when they should have been expensed. These out-of-period corrections were not material to any previously issued financial statements. There were no adjustments recorded during 2018 or 2017 related to the amounts then under investigation.

On February 15, 2019, we announced a resolution of the previously disclosed investigations by the U.S. Department of Justice ("DOJ") and the U.S. Securities and Exchange Commission ("SEC") into the matters that were the subject of our internal investigation. The resolution required the Company to pay approximately \$28 million to the DOJ and SEC, an amount consistent with the Company's accrual ("FCPA Accrual") recorded during the quarter ended September 30, 2018.

During the years ended December 31, 2018, 2017 and 2016, we incurred \$16 million (not including the FCPA Accrual), \$36 million and \$27 million, respectively, in costs related to the above investigations and the legal matters described in [Note 15](#) to our consolidated financial statements. We expect to continue to incur legal fees and other expenses, including indemnification and expense advancement obligations, related to stockholder litigation and other legal proceedings pertaining to the matters that were the focus of the now completed FCPA investigations described above.

2019 Business Considerations

During 2019, barring any unforeseen events, we expect the following factors to affect our business and our operating results:

- Demand from our customers for digital services and industry-specific changes driven by evolving digital technologies;
- Our customers' dual mandate of simultaneously achieving cost savings while investing in transformation and innovation;
- Continued focus by customers on directing technology spending towards cost containment projects;
- Discretionary spending by our customers may be negatively affected by international trade policies as well as other macroeconomic factors;
- Uncertainty related to the potential economic and regulatory impacts of the 2016 United Kingdom referendum to exit the European Union (the "Brexit Referendum");

- Demand from certain banking customers may continue to be negatively affected by their ongoing efforts to optimize the cost of supporting their legacy systems and operations, including moving a portion of their services to captives, as they shift their spend to transformation and digital services;
- Demand from our healthcare customers may continue to be affected by the uncertainty in the regulatory environment and industry-specific trends, including industry consolidation and convergence;
- Demand among our technology customers may be affected by uncertainty in the regulatory environment while significant merger and acquisition activity continues to impact our customers in the communications and media industry;
- Uncertainty regarding regulatory changes, including potential regulatory changes with respect to immigration and taxes;
- Legal fees and other expenses, including indemnification and expense advancement obligations, related to stockholder litigation and other legal proceedings pertaining to the matters that were the focus of now completed FCPA investigations described above; and
- Volatility in foreign currency rates.

In response to this environment, we plan to:

- Continue to invest in our digital capabilities across industries and geographies;
- Continue to invest in our talent base, including through local hiring and re-skilling, and new service offerings, including digital technologies and new delivery models;
- Partner with our existing customers to garner an increased portion of our customers' overall spend by providing innovative solutions;
- Focus on growing our business in Europe, the Middle East, Asia Pacific and Latin America, where we believe there are opportunities to gain market share;
- Pursue strategic acquisitions that we believe add new technologies, including digital technologies, or platforms that complement our existing services, improve our overall service delivery capabilities, or expand our geographic presence; and
- Focus on operating discipline in order to appropriately manage our cost structure.

Business Segments

Our reportable segments are:

- Financial Services, which consists of our banking and insurance operating segments;
- Healthcare, which consists of our healthcare and life sciences operating segments;
- Products and Resources, which consists of our retail and consumer goods, manufacturing and logistics, travel and hospitality, and energy and utilities operating segments; and
- Communications, Media and Technology, which includes our communications and media operating segment and our technology operating segment.

Our chief operating decision maker evaluates the Company's performance and allocates resources based on segment revenues and operating profit. Segment operating profit is defined as income from operations before unallocated costs. Generally, operating expenses for each operating segment have similar characteristics and are subject to the same factors, pressures and challenges. However, the economic environment and its effects on industries served by our operating segments may affect revenues and operating expenses to differing degrees.

We provide a significant volume of services to many customers in each of our business segments. Therefore, a loss of a significant customer or a few significant customers in a particular segment could materially reduce revenues for that segment. However, the services we provide to our larger customers are often critical to the operations of such customers and we believe that a termination of our services would require an extended transition period with gradually declining revenues.

See [Note 19](#) to our consolidated financial statements for additional information on our business segments.

Results of Operations for the Three Years Ended December 31, 2018

The following table sets forth certain financial data for the three years ended December 31, 2018:

	2018 ⁽¹⁾	% of Revenues	2017	% of Revenues	2016	% of Revenues	Increase/Decrease	
							2018	2017
(Dollars in millions, except per share data)								
Revenues	\$ 16,125	100.0	\$ 14,810	100.0	\$ 13,487	100.0	\$ 1,315	\$ 1,323
Cost of revenues ⁽²⁾	9,838	61.0	9,152	61.8	8,108	60.1	686	1,044
Selling, general and administrative expenses ⁽²⁾	3,026	18.8	2,769	18.7	2,731	20.2	257	38
Depreciation and amortization expense	460	2.9	408	2.8	359	2.7	52	49
Income from operations	2,801	17.4	2,481	16.8	2,289	17.0	320	192
Other income (expense), net	(4)		174		68		(178)	106
Income before provision for income taxes	2,797	17.3	2,655	17.9	2,357	17.5	142	298
Provision for income taxes	(698)		(1,153)		(805)		455	(348)
Income from equity method investment	2		2		1		—	1
Net income	\$ 2,101	13.0	\$ 1,504	10.2	\$ 1,553	11.5	\$ 597	\$ (49)
Diluted EPS	\$ 3.60		\$ 2.53		\$ 2.55		\$ 1.07	\$ (0.02)
<i>Other Financial Information</i> ⁽³⁾								
Non-GAAP income from operations and non-GAAP operating margin	\$ 3,345	20.7	\$ 2,912	19.7	\$ 2,636	19.5	433	\$ 276
Adjusted Income From Operations and Adjusted Operating Margin	\$ 2,920	18.1	\$ 2,553	17.3	\$ 2,289	17.0	367	264
Non-GAAP diluted EPS	\$ 4.57		\$ 3.77		\$ 3.39		0.80	0.38
Adjusted Diluted EPS	\$ 4.02		\$ 3.42		\$ 2.98		\$ 0.60	\$ 0.44

- (1) Results for 2018 are presented under the New Revenue Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting policies. See [Note 3](#) to our consolidated financial statements for additional information.
- (2) Exclusive of depreciation and amortization expense.
- (3) Non-GAAP income from operations, Adjusted Income from Operations, non-GAAP operating margin, Adjusted Operating Margin, non-GAAP diluted EPS and Adjusted Diluted EPS are not measurements of financial performance prepared in accordance with GAAP. See “Non-GAAP Financial Measures” for more information and reconciliations to the most directly comparable GAAP financial measures.

Revenues - Overall

Our revenue growth in 2018 and 2017 was primarily attributed to services related to the integration of digital technologies that are reshaping our customers' business and operating models, increased customer spending on discretionary projects, continued interest in using our global delivery model as a means to reduce overall technology and operations costs and continued penetration in all our geographic markets. Revenues from new customers contributed \$305 million and \$208 million, representing 23.2% and 15.7% of the year-over-year revenue growth for 2018 and 2017, respectively.

On January 1, 2018, we adopted the New Revenue Standard using the modified retrospective method. For the year ended December 31, 2018, adoption of the New Revenue Standard had a positive impact on revenue of \$96 million. See [Note 3](#) to our consolidated financial statements for additional information.

Revenues from our top customers as a percentage of total revenues were as follows:

	For the years ended December 31,		
	2018	2017	2016
Top five customers	8.6%	8.9%	10.0%
Top ten customers	15.4%	14.9%	16.7%

As we continue to add new customers and increase our penetration at existing customers, we expect the percentage of revenues from our top five and top ten customers to decline over time.

Revenues - Reportable Business Segments

Revenues by reportable business segment were as follows:

	2018 ⁽¹⁾	2017	2016	Increase			
				2018		2017	
				\$	%	\$	%
(Dollars in millions)							
Financial Services	\$ 5,845	\$ 5,636	\$ 5,366	\$ 209	3.7	\$ 270	5.0
Healthcare	4,668	4,263	3,871	405	9.5	392	10.1
Products and Resources	3,415	3,040	2,660	375	12.3	380	14.3
Communications, Media and Technology	2,197	1,871	1,590	326	17.4	281	17.7
Total revenues	\$ 16,125	\$ 14,810	\$ 13,487	\$ 1,315	8.9	\$ 1,323	9.8

- (1) Results for 2018 are presented under the New Revenue Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting policies. See [Note 3](#) to our consolidated financial statements for additional information.

Financial Services

Revenues from our Financial Services segment grew 3.7% in 2018. In 2018, growth was stronger among our insurance customers, where revenues increased by \$163 million as compared to an increase of \$46 million from our banking customers. In this segment, revenues from customers added during 2018 were \$40 million and represented 19.1% of the year-over-year revenues increase in this segment. Demand in this segment was driven by our customers' focus on cost optimization in the face of profitability pressures, the need to be compliant with significant regulatory requirements and adaptable to regulatory change, and their adoption and integration of digital technologies that are reshaping our customers' business and operating models, including customer experience enhancement, robotic process automation and analytics and artificial intelligence. Demand from certain banking customers has been and may continue to be negatively affected as they focus on optimizing the cost of supporting their legacy systems and operations, including moving a portion of their services to captives, as they shift their spend to transformation and digital services.

Revenues from our Financial Services segment grew 5.0% in 2017. In 2017, growth was stronger among our insurance customers, where revenues increased by \$191 million as compared to an increase of \$79 million from our banking customers. In 2017, revenues from customers added during that year were \$56 million and represented 20.7% of the year-over-year revenues increase in this segment. In 2017, demand from certain banking customers was negatively affected by their continued focus on optimizing their cost structure and managing their discretionary spending.

Healthcare

Revenues from our Healthcare segment grew 9.5% in 2018. In 2018, revenues in this segment increased by \$342 million from our healthcare customers as compared to an increase of \$63 million among our life sciences customers. Revenue growth from our healthcare customers includes revenues from Bolder, which we acquired in 2018, partially offset by a ramp down of a customer relationship in which we were a subcontractor to a third party for the purpose of delivering healthcare-related systems implementation services to local government. Revenues from customers added during 2018, including Bolder's customers, were \$139 million and represented 34.3% of the year-over-year revenue increase in this segment. Demand in this segment was driven by emerging industry trends, including enhanced compliance, integrated health management, claims investigative services, as well as services that drive operational improvements in areas such as claims processing, enrollment, membership and billing, in addition to the adoption and integration of digital technologies, such as artificial intelligence, personalized care plans and predictive data

analytics to improve patient outcomes. Demand from our healthcare customers has been and may continue to be affected by the uncertainty in the regulatory environment and industry-specific trends, including industry consolidation and convergence. We believe that in the long term the healthcare industry continues to present a significant growth opportunity due to factors that are transforming the industry, including the changing regulatory environment, increasing focus on medical costs and the consumerization of healthcare.

Revenues from our Healthcare segment grew 10.1% in 2017. In 2017, revenues in this segment increased by \$279 million from our healthcare customers as compared to an increase of \$113 million for our life sciences customers. Revenues from customers added during 2017 were \$40 million and represented 10.2% of the year-over-year revenues increase in this segment. The increase in revenues from our life sciences customers was driven by a growing demand for a broader range of services, including business process services, advanced data analytics and solutions that span multiple service lines while leveraging cloud technologies and platforms. In 2017, the demand for our services among our healthcare customers was affected by uncertainty in the regulatory environment.

Products and Resources

Revenues from our Products and Resources segment grew 12.3% in 2018. In 2018, revenue growth in this segment was strongest among our energy and utilities customers and our manufacturing and logistics customers, where revenues increased by a combined \$220 million. Revenues from our retail and consumer goods customers and travel and hospitality customers increased by a combined \$155 million. Revenues from customers added during 2018 were \$93 million and represented 24.8% of the year-over-year revenues increase in this segment. Demand in this segment was driven by our customers' focus on improving the efficiency of their operations, the enablement and integration of mobile platforms to support sales and other omni channel commerce initiatives, and their adoption and integration of digital technologies, such as the application of intelligent systems to manage supply chain and enhance overall customer experiences.

Revenues from our Products and Resources segment grew 14.3% in 2017. In 2017, revenue growth in this segment was strongest among our energy and utilities customers and manufacturing and logistic customers, where revenue increased by a combined \$326 million, including revenues from a new strategic customer acquired in the fourth quarter of 2016. Revenue from our retail and consumer goods customers and travel and hospitality customers increased by a combined \$54 million. Revenues from customers added during 2017 were \$85 million and represented 22.4% of the year over year revenue increase in this segment. In 2017, demand within this segment was driven by the increased adoption of digital technologies as well as growing demand for analytics, supply chain consulting, implementation initiatives, smart products, transformation of business models, internet of things and omni channel commerce implementation and integration services. In 2017, discretionary spending by our retail customers was affected by weakness in the retail sector.

Communications, Media and Technology

Revenues from our Communications, Media and Technology segment grew 17.4% in 2018. In 2018, growth was stronger among our technology customers where revenues increased \$259 million as compared to an increase of \$67 million for our communications and media customers. Revenues from customers added during 2018 were \$33 million and represented 10.1% of the year-over-year revenues increase in this segment. Demand in this segment was driven by our customers' need to manage their digital content, create differentiated user experiences, expand their range of services, including business process services, transition to agile development methodologies, enhance their network and adopt and integrate digital technologies, such as cloud enablement and interactive and connected products. Additionally, demand among our technology customers may be affected by uncertainty in the regulatory environment while significant merger and acquisition activity continues to impact our customers in the communications and media industry.

Revenues from our Communications, Media and Technology segment grew 17.7% in 2017. In 2017, revenue growth was \$154 million among our communications and media customers and \$127 million among our technology customers. Revenues from customers added during 2017 were \$27 million and represented 9.6% of the year-over-year revenues increase in this segment. In 2017, demand within this segment was driven by the increased adoption of digital technologies, digital content operations, services to help our customers balance rationalizing costs while creating a differentiated user experience and an expanded range of services, such as business process services.

Revenues - Geographic Locations

Revenues by geographic market, as determined by customer location, were as follows:

				Increase (Decrease)			
	2018 ⁽¹⁾		2017	2018		2017	
				\$	%	\$	%
(Dollars in millions)							
North America	\$ 12,293	\$ 11,450	\$ 10,546	\$ 843	7.4	\$ 904	8.6
United Kingdom	1,274	1,150	1,176	124	10.8	(26)	(2.2)
Rest of Europe	1,563	1,248	969	315	25.2	279	28.8
Europe - Total	2,837	2,398	2,145	439	18.3	253	11.8
Rest of World	995	962	796	33	3.4	166	20.9
Total revenues	\$ 16,125	\$ 14,810	\$ 13,487	\$ 1,315	8.9	\$ 1,323	9.8

- (1) Results for 2018 are presented under the New Revenue Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting policies. See [Note 3](#) to our consolidated financial statements for additional information.

North America continues to be our largest market, representing 76.2% of total 2018 revenues and 64.1% of total revenue growth in 2018. Revenues from our customers in Europe grew 18.3%, or 15.2% on a constant currency⁴ basis. Specifically, revenues from our Rest of Europe customers increased 25.2%, or 22.2% on a constant currency⁴ basis, while within the United Kingdom we experienced an increase in revenues of 10.8%, or 7.6% on a constant currency⁴ basis. Revenues from our Rest of World customers was 3.4%, or 6.1% on a constant currency⁴ basis. Revenue growth in the United Kingdom and Rest of World was negatively affected by weakness in our Financial Services segment as certain banking customers in those regions focus on optimizing the cost of supporting their legacy systems and operations, including moving a portion of their services to captives, as they shift their spend to transformation and digital services. We believe that Europe, India, Middle East, Asia Pacific and Latin America regions will continue to be areas of significant investment for us as we see these regions as long term growth opportunities.

In 2017, North America represented 77.3% of total revenues and 68.3% of total revenue growth. In 2017, the increase in revenues in this region was primarily attributed to services related to the integration of digital technologies that are reshaping our customers' business and operating models to align with shifts in consumer preferences, increased customer spending on discretionary projects and continued interest in using our global delivery model as a means to reduce overall technology and operations costs. In 2017, revenue growth in Europe and Rest of World markets was driven by an increase in demand for an expanded range of services, such as business process services and customer adoption and integration of digital technologies. Revenues from our customers in Europe grew 11.8%, or 13.0% on a constant currency⁴ basis. Specifically, revenues from our Rest of Europe customers, increased 28.8%, or 26.8% on a constant currency⁴ basis, while within the United Kingdom we experienced a decrease in revenues of 2.2%, or an increase of 1.6% on a constant currency⁴ basis. Revenue growth in the United Kingdom was negatively affected by weakness in the banking sector in that country. In 2017, revenues from our Rest of World customers grew 20.9%, primarily driven by the Australia and India markets.

Cost of Revenues (Exclusive of Depreciation and Amortization Expense)

Our cost of revenues consists primarily of salaries, incentive-based compensation, stock-based compensation expense, employee benefits, project-related immigration and travel for technical personnel and subcontracting costs relating to revenues. Our cost of revenues increased by 7.5% during 2018 as compared to an increase of 12.9% during 2017, decreasing as a percentage of revenue to 61.0% during 2018 compared to 61.8% in 2017. In 2018, the decrease in cost of revenues was due primarily to a decrease, as a percentage of revenues, in compensation and benefits costs due to the optimization of our resource pyramid, improved utilization and the depreciation of the Indian rupee against the U.S. dollar, partially offset by an increase in fees paid to strategic partners and other vendors in our digital operations, platform and infrastructure services and increases in certain professional service costs. In 2017, cost of revenues increased, as a percentage of revenue, to 61.8% as compared to 60.1% in 2016, primarily due to an increase in compensation and benefits costs and an increase in certain professional services costs.

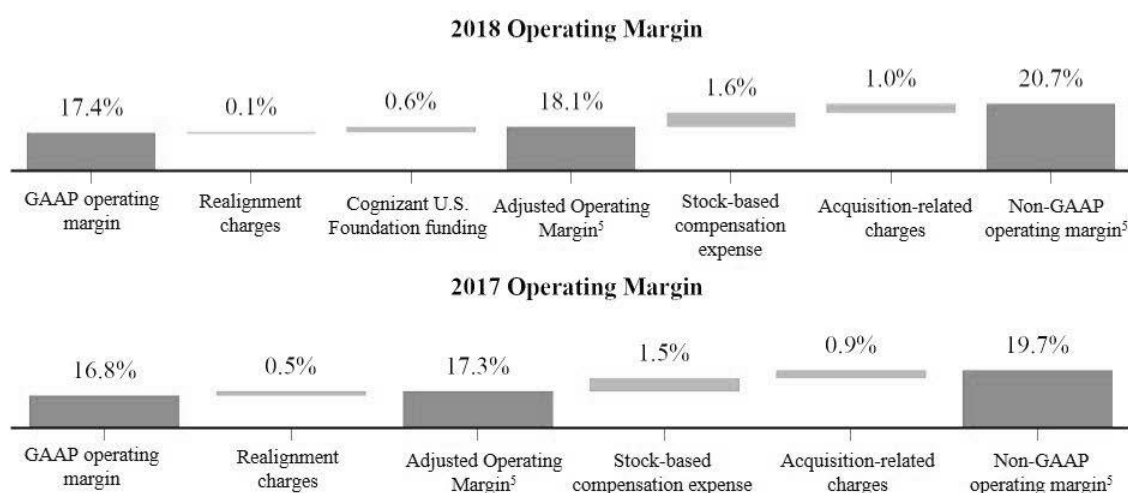
⁴ Constant currency revenue growth is not a measurement of financial performance prepared in accordance with GAAP. See "Non-GAAP Financial Measures" for more information.

Selling, General and Administrative Expenses

Selling, general and administrative expenses consist primarily of salaries, incentive-based compensation, stock-based compensation expense, employee benefits, immigration, travel, marketing, communications, management, finance, administrative and occupancy costs. Selling, general and administrative expenses, including depreciation and amortization, increased by 9.7% during 2018 as compared to an increase of 2.8% during 2017. Selling, general and administrative expenses, including depreciation and amortization, remained relatively flat as a percentage of revenues at 21.6% in 2018 as compared to 21.5% in 2017 and decreased from 22.9% in 2016. In 2018, selling, general and administrative expense included the initial funding of the Cognizant U.S. Foundation and the FCPA Accrual, collectively representing 0.8% of revenues. This was partially offset by a decrease in compensation and benefit costs due to our efforts to contain corporate spend. In 2017, the decrease as a percentage of revenues was due primarily to a decrease in compensation and benefit costs and a decrease in immigration expense, partially offset by increases in certain operating and professional service costs and increases in depreciation and amortization due to acquisitions.

Income from Operations and Operating Margin - Overall

The following charts set forth our GAAP operating margin, Adjusted Operating Margin⁵ and non-GAAP operating margin⁵ for the years ended December 31, 2018 and 2017:



The increases in our GAAP operating margin, Adjusted Operating Margin⁵ and non-GAAP operating margin⁵ were attributable to our margin enhancement initiatives, which targeted the optimization of our resource pyramid, improvement of utilization and the containment of our corporate spend, as well as the depreciation of the Indian Rupee against the U.S. dollar, net of lower gains on settlement of our cash flow hedges in 2018 compared to 2017. In 2018, our GAAP operating margin was negatively impacted by the impact of the initial funding of the Cognizant U.S. Foundation. Further, our GAAP operating margin and our Adjusted Operating Margin for 2018 were both negatively impacted by the increase in amortization expense due to recent acquisitions.

Excluding the impact of applicable designated cash flow hedges, the depreciation of the Indian rupee against the U.S. dollar positively impacted our operating margin by approximately 89 basis points or 0.89 percentage points in 2018, while in 2017 the appreciation of the Indian rupee against the U.S. dollar negatively impacted our operating margin by approximately 58 basis points or 0.58 percentage points. Each additional 1.0% change in exchange rate between the Indian rupee and the U.S. dollar will have the effect of moving our operating margin by approximately 18 basis points or 0.18 percentage points.

We enter into foreign exchange forward contracts to hedge certain Indian rupee denominated payments in India. These hedges are intended to mitigate the volatility of the changes in the exchange rate between the U.S. dollar and the Indian rupee. During the year ended December 31, 2018, the settlement of cash flow hedges positively impacted our operating margin by approximately 44 basis points or 0.44 percentage points as compared to a positive impact of approximately 87 basis points or 0.87 percentage points in 2017 and a positive impact of approximately 13 basis points or 0.13 percentage points in 2016.

⁵ Non-GAAP operating margin and Adjusted Operating Margin are not measurements of financial performance prepared in accordance with GAAP. See “Non-GAAP Financial Measures” for more information and reconciliations to the most directly comparable GAAP financial measures.

Our most significant costs are the salaries and related benefits for our employees. In certain regions, competition for professionals with the advanced technical skills necessary to perform our services has caused wages to increase at a rate greater than the general rate of inflation. As with other service providers in our industry, we must adequately anticipate wage increases, particularly on our fixed-price and transaction- or volume-based priced contracts. Historically, we have experienced increases in compensation and benefit costs in India; however, this has not had a material impact on our results of operations as we have been able to absorb such cost increases through cost management strategies, such as managing discretionary costs, the mix of professional staff and utilization levels, and achieving other operating efficiencies. There can be no assurance that we will be able to offset such cost increases in the future.

We finished the year with approximately 281,600 employees, which is an increase of approximately 21,600 over the prior year end. For the three months ended December 31, 2018, annualized turnover, including both voluntary and involuntary, was approximately 18.9%. Turnover for the years ended December 31, 2018, 2017 and 2016, including both voluntary and involuntary, was approximately 20.8%, 19.6% and 16.0%, respectively. The higher than usual annual turnover rate in 2018 reflects the highly competitive labor market in our industry in the geographies in which we compete for talent, including India. Annual attrition rates at on-site customer locations are generally below our global attrition rate. In addition, attrition is weighted more towards the junior members of our staff.

Segment Operating Profit and Margin

In 2018, we made changes to the internal measurement of segment operating profits for the purpose of evaluating segment performance and resource allocation. The primary reason for the changes was to charge to our business segments costs that are directly managed and controlled by them. Specifically, segment operating profit now includes the stock-based compensation expense of sales managers, account executives, account managers and project teams, which was previously included in "unallocated costs." In addition, we have changed the methodology of allocating costs to our business segments for the use of our global delivery centers and infrastructure from a fixed per employee charge to a variable per employee charge that differs depending on location and assets deployed.

Segment operating profit and margin were as follows:

	2018	Operating Margin %	2017	Operating Margin %	2016 ⁽¹⁾	Operating Margin %	Increase / (Decrease)	
							2018	2017 ⁽¹⁾
(Dollars in millions)								
Financial Services	\$ 1,757	30.1	\$ 1,771	31.4	\$ 1,707	31.8	\$ (14)	\$ 64
Healthcare	1,431	30.7	1,301	30.5	1,153	29.8	130	148
Products and Resources	1,043	30.5	923	30.4	851	32.0	120	72
Communications, Media and Technology	700	31.9	601	32.1	488	30.7	99	113
Total segment operating profit and margin	4,931	30.6	4,596	31.0	4,199	31.1	335	397
Less: unallocated costs	2,130		2,115		1,910		15	205
Income from operations	<u>\$ 2,801</u>	17.4	<u>\$ 2,481</u>	16.8	<u>\$ 2,289</u>	17.0	<u>\$ 320</u>	<u>\$ 192</u>

(1) As described above, in 2018 we made changes to the internal measurement of segment operating profits. While we have restated the 2017 results to conform to the new methodology, it is impracticable for us to restate our 2016 segment operating results as the detailed information required for the allocation of such costs to the segments is not reasonably available.

In 2018, our Financial Services segment operating margin decreased due to investments in our digital platform and infrastructure services as well as costs incurred to re-skill service delivery personnel, partially offset by the depreciation of the Indian rupee against the U.S. dollar. In our Healthcare, Products and Resources and Communications, Media and Technology segments, operating margins remained relatively flat.

In 2017, prior to giving effect to the changes in the measurement of our segment operating profit as described above, our operating margins for our Financial Services, Healthcare, Products and Resources and Communications, Media and Technology segments were 29.0%, 30.6%, 28.6% and 30.2%, respectively. Our Financial Services, Products and Resources and Communications, Media and Technology segments operating margins decreased due to increases in compensation and benefits costs, investments to accelerate our shift to digital, including re-skilling of service delivery personnel, and the negative impact of the appreciation of various currencies, including the Indian rupee, against the U.S. dollar. Our Financial Services segment's operating profit was negatively impacted by weakness in the banking sector as certain customers focused on optimizing their cost

structure and managing their discretionary spending. In 2017, our Healthcare segment operating margin increased, benefiting from lower losses on certain fixed-price contracts with customers.

Other Income (Expense), Net

Total other income (expense), net consists primarily of foreign currency exchange gains and losses, interest income and interest expense. The following table sets forth total other income (expense), net for the years ended December 31:

				Increase / Decrease	
	2018	2017	2016	2018	2017
	(in millions)				
Foreign currency exchange (losses) gains	\$ (183)	\$ 90	\$ (27)	\$ (273)	\$ 117
Gains (losses) on foreign exchange forward contracts not designated as hedging instruments	31	(23)	(3)	54	(20)
Foreign currency exchange gains (losses), net	(152)	67	(30)	(219)	97
Interest income	177	133	115	44	18
Interest expense	(27)	(23)	(19)	(4)	(4)
Other, net	(2)	(3)	2	1	(5)
Total other income (expense), net	<u>\$ (4)</u>	<u>\$ 174</u>	<u>\$ 68</u>	<u>\$ (178)</u>	<u>\$ 106</u>

The foreign currency exchange gains and losses in all the years presented were primarily attributable to the remeasurement of the Indian rupee denominated net monetary assets and liabilities in our U.S. dollar functional currency India subsidiaries and, to a lesser extent, the remeasurement of other net monetary assets and liabilities denominated in currencies other than the functional currencies of our subsidiaries. The gains and losses on foreign exchange forward contracts not designated as hedging instruments relate to the realized and unrealized gains and losses on foreign exchange forward contracts entered into to partially offset foreign currency exposure to the British pound, Euro, Indian rupee and other non-U.S. dollar denominated net monetary assets and liabilities. As of December 31, 2018, the notional value of our undesignated hedges was \$507 million. The increases in interest income in 2018 and 2017 were primarily attributed to increases in average invested balances and higher yields.

Provision for Income Taxes

The provision for income taxes was \$698 million in 2018, \$1,153 million in 2017 and \$805 million in 2016. The effective income tax rate decreased to 25.0% in 2018 from 43.4% in 2017 and 34.2% in 2016. The decrease in our effective tax rate in 2018 was primarily driven by the one-time net income tax expense of \$617 million that was recorded in 2017 as a result of the enactment of the Tax Reform Act and the reduction of the U.S. federal statutory corporate income tax rate in 2018 from 35% to 21%. In 2016, we incurred an incremental income tax expense of \$238 million related to the India Cash Remittance.

Net Income

Net income was \$2,101 million in 2018, \$1,504 million in 2017 and \$1,553 million in 2016. Net income as a percentage of revenues increased to 13.0% in 2018 from 10.2% in 2017 primarily due to the decrease in the provision for income taxes and an increase in income from operations, partially offset by the fluctuation in the value of the Indian rupee which generated foreign currency exchange losses in 2018 compared to foreign currency exchange gains in 2017. In 2017, net income as a percentage of revenues decreased to 10.2% from 11.5% in 2016 primarily due to the incremental income tax expense related to the Tax Reform Act in 2017.

Non-GAAP Financial Measures

Portions of our disclosure include non-GAAP financial measures. These non-GAAP financial measures are not based on any comprehensive set of accounting rules or principles and should not be considered a substitute for, or superior to, financial measures calculated in accordance with GAAP, and may be different from non-GAAP financial measures used by other companies. In addition, these non-GAAP financial measures should be read in conjunction with our financial statements prepared in accordance with GAAP. The reconciliations of our non-GAAP financial measures to the corresponding GAAP measures, set forth in the following table, should be carefully evaluated.

In 2018, we announced a plan to modify our non-GAAP financial measures. Our historical non-GAAP financial measures, non-GAAP operating margin, non-GAAP income from operations and non-GAAP diluted EPS, excluded stock-based compensation expense, acquisition-related charges and unusual items, such as realignment charges and in 2018, the initial funding of the Cognizant

U.S. Foundation. Our non-GAAP diluted EPS additionally excluded net non-operating foreign currency exchange gains or losses and unusual items, such as the effect of the net income tax expense and benefit related to the enactment of the Tax Reform Act in 2018 and 2017, respectively, the effect of the recognition of an income tax benefit previously unrecognized in our consolidated financial statements related to a specific uncertain tax position in 2017, the effect of an incremental income tax expense related to the India Cash Remittance in 2016, and the tax impacts of all applicable adjustments. Our new non-GAAP financial measures, Adjusted Operating Margin and Adjusted Income From Operations, exclude only unusual items and Adjusted Diluted EPS additionally excludes net non-operating foreign currency exchange gains or losses and the tax impact of all applicable adjustments. The income tax impact of each item is calculated by applying the statutory rate and local tax regulations in the jurisdiction in which the item was incurred. Additionally, we are introducing two new non-GAAP financial measures, free cash flow and constant currency revenue growth. Free cash flow is defined as cash flows from operating activities net of purchases of property and equipment. Constant currency revenue growth is defined as revenues for a given period restated at the comparative period's foreign currency exchange rates measured against the comparative period's reported revenues.

We believe providing investors with an operating view consistent with how we manage the Company provides enhanced transparency into our operating results. For our internal management reporting and budgeting purposes, we use various GAAP and non-GAAP financial measures for financial and operational decision-making, to evaluate period-to-period comparisons, to determine portions of the compensation for our executive officers and for making comparisons of our operating results to those of our competitors. Therefore, it is our belief that the use of non-GAAP financial measures excluding certain costs provides a meaningful supplemental measure for investors to evaluate our financial performance. We believe that changing our historical non-GAAP financial measures, as discussed above, will result in non-GAAP financial measures that more closely align with how we intend to manage the Company. We believe that the presentation of our new non-GAAP financial measures (Adjusted Income from Operations, Adjusted Operating Margin, Adjusted Diluted EPS, free cash flow and constant currency revenue growth) as well as our historical non-GAAP financial measures (non-GAAP income from operations, non-GAAP operating margin and non-GAAP diluted EPS) along with reconciliations to the most comparable GAAP measure, as applicable, can provide useful supplemental information to our management and investors regarding financial and business trends relating to our financial condition and results of operations.

A limitation of using non-GAAP financial measures versus financial measures calculated in accordance with GAAP is that non-GAAP financial measures do not reflect all of the amounts associated with our operating results as determined in accordance with GAAP and may exclude costs that are recurring, namely stock-based compensation expense, certain acquisition-related charges, and net non-operating foreign currency exchange gains or losses. In addition, other companies may calculate non-GAAP financial measures differently than us, thereby limiting the usefulness of these non-GAAP financial measures as a comparative tool. We compensate for these limitations by providing specific information regarding the GAAP amounts excluded from our non-GAAP financial measures to allow investors to evaluate such non-GAAP financial measures.

The following table presents a reconciliation of each non-GAAP financial measure to the most comparable GAAP measure for the years ended December 31:

	2018	% of Revenues	2017	% of Revenues	2016	% of Revenues
	(Dollars in millions, except per share data)					
GAAP income from operations and operating margin	\$ 2,801	17.4%	\$ 2,481	16.8%	\$ 2,289	17.0%
Realignment charges ⁽¹⁾	19	0.1	72	0.5	—	—
Initial funding of Cognizant U.S. Foundation ⁽²⁾	100	0.6	—	—	—	—
Adjusted Income From Operations and Adjusted Operating Margin	2,920	18.1	2,553	17.3	2,289	17.0
Stock-based compensation expense ⁽³⁾	267	1.6	221	1.5	217	1.6
Acquisition-related charges ⁽⁴⁾	158	1.0	138	0.9	130	0.9
Non-GAAP income from operations and non-GAAP operating margin	<u>\$ 3,345</u>	<u>20.7%</u>	<u>\$ 2,912</u>	<u>19.7%</u>	<u>\$ 2,636</u>	<u>19.5%</u>
GAAP diluted EPS	\$ 3.60		\$ 2.53		\$ 2.55	
Effect of realignment charges and initial funding of Cognizant U.S. Foundation, as applicable, pre-tax	0.20		0.12		—	
Effect of non-operating foreign currency exchange losses (gains), pre-tax ⁽⁵⁾	0.26		(0.12)		0.04	
Tax effect of above adjustments ⁽⁶⁾	(0.03)		(0.06)		—	
Effect of net incremental income tax expense related to the Tax Reform Act ⁽⁷⁾	(0.01)		1.04		—	
Effect of recognition of income tax benefit related to an uncertain tax position ⁽⁸⁾	—		(0.09)		—	
Effect of incremental income tax expense related to the India Cash Remittance ⁽⁹⁾	—		—		0.39	
Adjusted Diluted EPS	<u>4.02</u>		<u>3.42</u>		<u>2.98</u>	
Effect of stock-based compensation expense and acquisition-related charges, pre-tax	0.73		0.60		0.57	
Tax effect of stock-based compensation expense and acquisition-related charges ⁽⁶⁾	(0.18)		(0.25)		(0.16)	
Non-GAAP diluted EPS	<u>\$ 4.57</u>		<u>\$ 3.77</u>		<u>\$ 3.39</u>	
Net cash provided by operating activities	\$ 2,592		\$ 2,407		\$ 1,645	
Purchases of property and equipment	(377)		(284)		(300)	
Free cash flow	<u>\$ 2,215</u>		<u>\$ 2,123</u>		<u>\$ 1,345</u>	

- (1) Realignment charges include severance costs, lease termination costs, and advisory fees related to non-routine shareholder matters and to the development of our realignment and return of capital programs, as applicable. The total costs related to the realignment are reported in Selling, general and administrative expenses in our consolidated statements of operations. See [Note 5](#) to our consolidated financial statements for additional information.
- (2) In 2018, we provided \$100 million of initial funding to Cognizant U.S. Foundation, which is focused on science, technology, engineering and math education in the United States.
- (3) Stock-based compensation expense reported in:

	For the years ended December 31,		
	2018	2017	2016
	(in millions)		
Cost of revenues	\$ 62	\$ 55	\$ 53
Selling, general and administrative expenses	205	166	164

- (4) Acquisition-related charges include amortization of purchased intangible assets included in the depreciation and amortization expense line on our consolidated statements of operations, external deal costs, acquisition-related retention bonuses, integration costs, changes in the fair value of contingent consideration liabilities, charges for impairment of acquired intangible assets and other acquisition-related costs, as applicable.
- (5) Non-operating foreign currency exchange gains and losses, inclusive of gains and losses on related foreign exchange forward contracts not designated as hedging instruments for accounting purposes, are reported in Foreign currency exchange gains (losses), net in our consolidated statements of operations.
- (6) Presented below are the tax impacts of each of our non-GAAP adjustments to pre-tax income:

	For the years ended December 31,		
	2018	2017	2016
	(in millions)		
Non-GAAP income tax benefit (expense) related to:			
Realignment charges	\$ 5	\$ 25	\$ —
Initial funding of Cognizant U.S. Foundation	28	—	—
Foreign currency exchange gains and losses	(12)	10	5
Stock-based compensation expense	66	101	49
Acquisition-related charges	38	48	46

The effective income tax rate related to each of our non-GAAP adjustments varies depending on the jurisdictions in which such income and expenses are generated and the statutory rates applicable in those jurisdictions.

- (7) In 2017, in connection with the enactment of the Tax Reform Act, we recorded a one-time provisional net income tax expense of \$617 million. In 2018, we finalized our calculation of the one-time net income tax expense related to the enactment of the Tax Reform Act and recognized a \$5 million income tax benefit, which reduced our provision for income taxes.
- (8) In 2017, we recognized an income tax benefit previously unrecognized in our consolidated financial statements related to a specific uncertain tax position of \$55 million. The recognition of the benefit in 2017 was based on management's reassessment regarding whether this unrecognized tax benefit met the more-likely-than-not threshold in light of the lapse in the statute of limitations as to a portion of such benefit.
- (9) In 2016, as a result of the India Cash Remittance, we incurred an incremental income tax expense of \$238 million.

Liquidity and Capital Resources

Our cash generated from operations has historically been our primary source of liquidity to fund operations and investments to grow our business. In addition, as of December 31, 2018, we had cash, cash equivalents and short-term investments of \$4,511 million, of which \$423 million was restricted and not available for use as a result of our dispute with the ITD with respect to our 2016 India Cash Remittance. See [Note 11](#) of our consolidated financial statements for more information. As of December 31, 2018, we had available capacity under our revolving credit facility of approximately \$1,750 million.

The following table provides a summary of our cash flows for the three years ended December 31:

				Increase / Decrease	
	2018	2017	2016	2018	2017
	(in millions)				
Net cash provided by (used in):					
Operating activities	\$ 2,592	\$ 2,407	\$ 1,645	\$ 185	\$ 762
Investing activities	(1,627)	(582)	(963)	(1,045)	381
Financing activities	(1,693)	(1,985)	(743)	292	(1,242)

Operating activities

The increase in cash generated from operating activities for 2018 compared to 2017 was primarily attributable to the increase in income from operations offset by a higher days sales outstanding ("DSO"). Our DSO was 75 days as of December 31, 2018, 71 days as of December 31, 2017 and 72 days as of December 31, 2016. The increase in cash generated from operating activities for 2017 compared to 2016 was primarily attributable to the increase in pre-tax earnings.

We monitor turnover, aging and the collection of accounts receivable by customer. On January 1, 2018, we adopted the New Revenue Standard using the modified retrospective method. Upon adoption, we reclassified (i) balances representing receivables,

as defined by the New Revenue Standard, from Unbilled accounts receivable to Trade accounts receivable, net and (ii) balances representing contract assets, as defined by the New Revenue Standard, from Unbilled accounts receivable to Other current assets. Balances as of December 31, 2018 are presented under the New Revenue Standard, while prior period balances are not adjusted and continue to be reported in accordance with our historic accounting policies. See [Note 3](#) of our consolidated financial statements for more information.

Historically, our DSO calculation included billed and unbilled accounts receivable, net of allowance for doubtful accounts, reduced by the uncollected portion of our deferred revenue. To reflect the adoption of the New Revenue Standard and maintain the comparability of the calculation, in 2018 we adjusted the definition to include receivables, as defined by the New Revenue Standard, net of allowance for doubtful accounts, and contract assets, reduced by the uncollected portion of our deferred revenue.

Investing activities

The increase in net cash used in investing activities in 2018 compared to 2017 is primarily related to an increase in cash used for acquisitions. In 2017, the decrease in net cash used when compared to 2016 was primarily due to lower net purchases of investments and a decrease in cash used for acquisitions.

Financing activities

The decrease in cash used in financing activities in 2018 compared to 2017 is primarily attributable to lower repurchases of common stock, partially offset by an increase in dividend payments and higher net repayments of debt. In 2017, the increase in cash used when compared to 2016 was primarily attributable to repurchases of common stock under the accelerated stock repurchase agreements and dividend payments, partially offset by lower net repayments of debt.

In 2014, we entered into a credit agreement with a commercial bank syndicate, (as amended, the "Credit Agreement") providing for a \$1,000 million unsecured term loan and a \$750 million unsecured revolving credit facility which were due to mature in November 2019. In November 2018, we completed a debt refinancing in which we entered into a credit agreement with a new commercial bank syndicate (the "New Credit Agreement") providing for a \$750 million unsecured term loan (the "New Term Loan") and a \$1,750 million unsecured revolving credit facility, which are due to mature in November 2023. We are required under the New Credit Agreement to make scheduled quarterly principal payments on the New Term Loan beginning in December 2019.

The New Credit Agreement requires interest to be paid, at our option, at either the ABR or the Eurocurrency Rate (each as defined in the New Credit Agreement), plus, in each case, an Applicable Margin (as defined in the New Credit Agreement). Initially, the Applicable Margin is 0.875% with respect to Eurocurrency Rate loans and 0.00% with respect to ABR loans. Subsequently, the Applicable Margin with respect to Eurocurrency Rate loans may range from 0.75% to 1.125%, depending on our public debt ratings (or, if we have not received public debt ratings, from 0.875% to 1.125%, depending on our Leverage Ratio, which is the ratio of indebtedness for borrowed money to Consolidated EBITDA, as defined in the New Credit Agreement). Under the New Credit Agreement, we are required to pay commitment fees on the unused portion of the revolving credit facility, which vary based on our public debt ratings (or, if we have not received public debt ratings, on the Leverage Ratio).

The New Credit Agreement contains customary affirmative and negative covenants as well as a financial covenant. The financial covenant is tested at the end of each fiscal quarter and requires us to maintain a Leverage Ratio not in excess of 3.50 to 1.00, or for a period of up to four quarters following certain material acquisitions, 3.75 to 1.00. We were in compliance with all debt covenants and representations of the New Credit Agreement as of December 31, 2018. We believe that we currently meet all conditions set forth in the New Credit Agreement to borrow thereunder, and we are not aware of any conditions that would prevent us from borrowing part or all of the remaining available capacity under the revolving credit facility as of December 31, 2018 and through the date of this filing.

As part of our capital return plan, we returned \$3.7 billion to our stockholders through \$2,975 million in share repurchases and \$733 million in dividend payments over the two years ended December 31, 2018, exceeding our previously announced target of \$3.4 billion. Beginning in 2019, our new capital return plan anticipates the deployment of approximately 50% of our global free cash flow⁶ for dividends and share repurchases and approximately 25% of global free cash flow⁶ for acquisitions, as needed. For the year ended December 31, 2018, our cash flows from operating activities were \$2,592 million while our global free cash flow⁶ was \$2,215 million. We review our capital return plan on an on-going basis, considering our financial performance and liquidity position, investments required to execute our strategic plans and initiatives, acquisition opportunities, the economic outlook, regulatory changes and other relevant factors. As these factors may change over time, the actual amounts expended on stock repurchase activity, dividends, and acquisitions, if any, during any particular period cannot be predicted and may fluctuate from time to time.

Other Liquidity and Capital Resources Information

We seek to ensure that our worldwide cash is available in the locations in which it is needed. As part of our ongoing liquidity assessments, we regularly monitor the mix of our domestic and international cash flows and cash balances. As of December 31, 2018, the amount of our cash, cash equivalents and short-term investments held outside the United States was \$2,704 million, of which \$1,776 million was in India. As further described in [Note 11](#) of our consolidated financial statements, \$423 million of our short-term investment balances held in India were classified as restricted as of December 31, 2018.

As a result of the enactment of the Tax Reform Act, our historical and future foreign earnings are no longer subject to U.S. federal income tax upon repatriation beyond the one-time transition tax accrued in 2017. As such, in 2018, we reevaluated our assertion that our foreign earnings would be indefinitely reinvested and concluded that our Indian earnings will continue to be indefinitely reinvested while historical accumulated undistributed earnings of our foreign subsidiaries other than our Indian subsidiaries, are available for repatriation to the United States. We evaluate on an ongoing basis what portion of the non-U.S. cash, cash equivalents and short-term investments held outside India is needed locally to execute our strategic plans and what amount is available for repatriation back to the United States. During 2018, we repatriated \$2,414 million from our foreign subsidiaries.

Our assertion that our earnings in India continue to be indefinitely reinvested is consistent with our ongoing strategy to expand our Indian operations, including through infrastructure investments. However, future events may occur, such as material changes in cash estimates, discretionary transactions, including corporate restructurings, and changes in applicable laws, that may lead us to repatriate the undistributed Indian earnings. As of December 31, 2018, the amount of unrepatriated Indian earnings was approximately \$4,679 million. If all of our accumulated unrepatriated Indian earnings were to be repatriated, based on our current interpretation of India tax law, we estimate that we would incur an additional income tax expense of approximately \$980 million. This estimate is subject to change based on tax legislation developments in India and other jurisdictions as well as judicial and interpretive developments of applicable tax laws.

We expect our operating cash flow, cash and investment balances (excluding the \$423 million of India restricted assets), together with our available capacity under our revolving credit facility to be sufficient to meet our operating requirements, in India and globally, for the next twelve months. Our ability to expand and grow our business in accordance with current plans, make acquisitions and form joint ventures, meet our long-term capital requirements beyond a twelve-month period and execute our capital return plan will depend on many factors, including the rate, if any, at which our cash flow increases, our ability and willingness to pay for acquisitions and joint ventures with capital stock and the availability of public and private debt and equity financing. We cannot be certain that additional financing, if required, will be available on terms and conditions acceptable to us, if at all.

As further described in [Note 11](#) of our consolidated financial statements, certain short-term investment balances in India totaling \$423 million were restricted in connection with our dispute with the ITD with respect to our 2016 India Cash Remittance. The ITD Dispute is currently pending before the Madras High Court, and no final decision has been reached. The affected balances may continue to remain restricted and unavailable for our use while the dispute is ongoing.

⁶ Free cash flow is not a measurement of financial performance prepared in accordance with GAAP. See “Non-GAAP Financial Measures” for more information and a reconciliation to the comparable GAAP financial measure.

Commitments and Contingencies

Commitments

As of December 31, 2018, we had the following obligations and commitments to make future payments under contractual obligations and commercial commitments:

	Payments due by period				
	Total	Less than 1 year	1-3 years (in millions)	3-5 years	More than 5 years
Long-term debt obligations ⁽¹⁾	\$ 750	\$ 9	\$ 75	\$ 666	\$ —
Interest on long-term debt ⁽²⁾	114	26	48	40	—
Capital lease obligations	71	17	23	12	19
Operating lease obligations	988	226	354	211	197
Other purchase commitments ⁽³⁾	207	117	69	21	—
Tax Reform Act transition tax ⁽⁴⁾	528	51	101	222	154
Total	<u>\$ 2,658</u>	<u>\$ 446</u>	<u>\$ 670</u>	<u>\$ 1,172</u>	<u>\$ 370</u>

- (1) Consists of scheduled repayments of our term loan.
- (2) Interest on the term loan was calculated at interest rates in effect as of December 31, 2018.
- (3) Other purchase commitments include, among other things, communications and information technology obligations, as well as other obligations in the ordinary course of business that we cannot cancel or where we would be required to pay a termination fee in the event of cancellation.
- (4) The Tax Reform Act transition tax on undistributed foreign earnings is payable in installments through the year 2024. See [Note 11](#) to our consolidated financial statements.

The above table does not include the \$28 million FCPA Accrual. See [Note 2](#) to our consolidated financial statements.

As of December 31, 2018, we had \$117 million of unrecognized tax benefits. This represents the tax benefits associated with certain tax positions on our U.S. and non-U.S. tax returns that have not been recognized on our financial statements due to uncertainty regarding their resolution. The resolution of these income tax positions with the relevant taxing authorities is at various stages, and therefore we are unable to make a reliable estimate of the eventual cash flows by period that may be required to settle these matters.

Contingencies

See [Note 15](#) to our consolidated financial statements for additional information.

Off-Balance Sheet Arrangements

Other than our foreign exchange forward contracts, there were no off-balance sheet transactions, arrangements or other relationships with unconsolidated entities or other persons in 2018, 2017 and 2016 that have, or are reasonably likely to have, a current or future effect on our financial condition, revenues or expenses, results of operations, liquidity, capital expenditures or capital resources.

Critical Accounting Estimates

Management's discussion and analysis of our financial condition and results of operations is based on our accompanying consolidated financial statements that have been prepared in accordance with GAAP. We base our estimates on historical experience, current trends and on various other assumptions that are believed to be relevant at the time our consolidated financial statements are prepared. We evaluate our estimates on a continuous basis. However, the actual amounts may differ from the estimates used in the preparation of the accompanying consolidated financial statements.

We believe the following accounting estimates are the most critical to aid in fully understanding and evaluating our reported consolidated financial statements as they require the most difficult, subjective or complex judgments, resulting from the need to make estimates about the effect of matters that are inherently uncertain. Changes to these estimates could have a material adverse

effect on our results of operations and financial condition. Our significant accounting policies are described in Note 1 of the accompanying consolidated financial statements.

Revenue Recognition. Revenues related to fixed-price contracts for application development and systems integration services, consulting or other technology services are recognized as the service is performed using the cost to cost method, under which the total value of revenues is recognized on the basis of the percentage that each contract's total labor cost to date bears to the total expected labor costs. Revenues related to fixed-price application maintenance, testing and business process services are recognized using the cost to cost method, if the right to invoice is not representative of the value being delivered. The cost to cost method requires estimation of future costs, which is updated as the project progresses to reflect the latest available information. Such estimates and changes in estimates involve the use of judgment. The cumulative impact of any revision in estimates is reflected in the financial reporting period in which the change in estimate becomes known and any anticipated losses on contracts are recognized immediately. Changes in estimates of such future costs and contract losses were immaterial to the consolidated results of operations for the periods presented.

Further, we include in the transaction price variable consideration only to the extent it is probable that a significant reversal of revenues recognized will not occur when the uncertainty associated with the variable consideration is resolved. Our estimates of variable consideration and determination of whether to include estimated amounts in the transaction price may involve judgment and are based largely on an assessment of our anticipated performance and all information that is reasonably available to us. Our estimates of variable consideration were immaterial to the consolidated results of operations for the periods presented.

Income Taxes. Determining the consolidated provision for income tax expense, deferred income tax assets (and related valuation allowance, if any) and liabilities requires significant judgment. We are required to calculate and provide for income taxes in each of the jurisdictions where we operate. Changes in the geographic mix of income before taxes or estimated level of annual pre-tax income can affect our overall effective income tax rate. In addition, transactions between our affiliated entities are arranged in accordance with applicable transfer pricing laws, regulations and relevant guidelines. As a result, and due to the interpretive nature of certain aspects of these laws and guidelines, we have pending before the taxing authorities in some of our most significant jurisdictions applications for Advance Pricing Agreements ("APAs"). It could take years for the relevant taxing authorities to negotiate and conclude these applications. The consolidated provision for income taxes may change period to period based on changes in facts and circumstances, such as settlements of income tax audits or finalization of our applications for APAs.

Our provision for income taxes also includes the impact of reserves established for uncertain income tax positions, as well as the related interest, which may require us to apply judgment to complex issues and may require an extended period of time to resolve. Although we believe we have adequately reserved for our uncertain tax positions, no assurance can be given that the final outcome of these matters will not differ from our recorded amounts. We adjust these reserves in light of changing facts and circumstances, such as the closing of a tax audit. To the extent that the final outcome of these matters differs from the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made.

Business Combinations, Goodwill and Intangible Assets. Goodwill and intangible assets, including indefinite-lived intangible assets, arise from the accounting for business combinations. We account for business combinations using the acquisition method which requires us to estimate the fair value of identifiable assets acquired, liabilities assumed, including any contingent consideration, and any noncontrolling interest in the acquiree to properly allocate purchase price consideration to the individual assets acquired and liabilities assumed. The allocation of the purchase price utilizes significant estimates in determining the fair values of identifiable assets acquired and liabilities assumed, especially with respect to intangible assets. The significant estimates and assumptions include the timing and amount of forecasted revenues and cash flows, anticipated growth rates, customer attrition rates, the discount rate reflecting the risk inherent in future cash flows and the determination of useful lives for finite-lived assets.

We exercise judgment to allocate goodwill to the reporting units expected to benefit from each business combination. Goodwill is tested for impairment at the reporting unit level on an annual basis and between annual tests if an event occurs or circumstances change that would more likely than not reduce the fair value of a reporting unit below its carrying value. These events or circumstances could include a significant change in the business climate, regulatory environment, established business plans, operating performance indicators or competition. Evaluation of goodwill for impairment requires judgment, including the identification of reporting units, assignment of assets, liabilities and goodwill to reporting units and determination of the fair value of each reporting unit. To better align our annual goodwill impairment assessment with the timing of our budget process, we elected to change the date of our annual goodwill impairment assessment from December 31st to October 31st.

We estimate the fair value of our reporting units using a combination of an income approach, utilizing a discounted cash flow analysis, and a market approach, using market multiples. Under the income approach, we estimate projected future cash flows, the timing of such cash flows and long term growth rates, and determine the appropriate discount rate that reflects the risk inherent in the projected future cash flows. The discount rate used is based on our weighted-average cost of capital and may be adjusted for the relevant risk associated with business-specific characteristics and the uncertainty related to the reporting unit's

ability to execute on the projected future cash flows. Under the market approach, we estimate fair value based on market multiples of revenues and earnings derived from comparable publicly-traded companies with characteristics similar to the reporting unit. The estimates used to calculate the fair value of a reporting unit change from year to year based on operating results, market conditions and other factors. Changes in these estimates and assumptions could materially affect the determination of fair value for each reporting unit.

We also evaluate indefinite-lived intangible assets for impairment at least annually, or as circumstances warrant. Our 2018 qualitative assessment included the review of relevant macroeconomic factors and entity-specific qualitative factors to determine if it was more-likely-than-not that the fair value of our indefinite-lived intangible assets was below carrying value.

Based on our most recent evaluation of goodwill and indefinite-lived intangible assets performed during the fourth quarter of 2018, we concluded the goodwill and indefinite-lived intangible asset balances in each of our reporting units were not at risk of impairment. As of December 31, 2018, our goodwill and indefinite-lived intangible asset balances were \$3,481 million and \$72 million, respectively.

We review our finite-lived assets, including our finite-lived intangible assets, for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. We recognize an impairment loss when the sum of the undiscounted expected future cash flows is less than the carrying amount of such assets. The impairment loss is determined as the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assessing the fair value of assets involves significant estimates and assumptions including estimation of future cash flows, the timing of such cash flows and discount rates reflecting the risk inherent in future cash flows.

Contingencies. Loss contingencies are recorded as liabilities when a loss is considered probable and the amount can be reasonably estimated. When a material loss contingency is reasonably possible but not probable, we do not record a liability, but instead disclose the nature and amount of the claim, and an estimate of the loss or range of loss, if such an estimate can be made. Significant judgment is required in the determination of both probability and whether an exposure is reasonably estimable. Our judgments are subjective and based on the information available from the status of the legal or regulatory proceedings, the merits of our defenses and consultation with in-house and outside legal counsel. As additional information becomes available, we reassess any potential liability related to any pending litigation and may revise our estimates. Such revisions in estimates of any potential liabilities could have a material impact on our results of operations and financial position.

Recently Adopted and New Accounting Pronouncements

See [Note 1](#) to our consolidated financial statements for additional information.

Forward Looking Statements

The statements contained in this Annual Report on Form 10-K that are not historical facts are forward-looking statements (within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended) that involve risks and uncertainties. Such forward-looking statements may be identified by, among other things, the use of forward-looking terminology such as “believe,” “expect,” “may,” “could,” “would,” “plan,” “intend,” “estimate,” “predict,” “potential,” “continue,” “should” or “anticipate” or the negative thereof or other variations thereon or comparable terminology, or by discussions of strategy that involve risks and uncertainties. From time to time, we or our representatives have made or may make forward-looking statements, orally or in writing.

Such forward-looking statements may be included in various filings made by us with the SEC, in press releases or in oral statements made by or with the approval of one of our authorized executive officers. These forward-looking statements, such as statements regarding our anticipated future revenues or operating margins, earnings, capital expenditures, anticipated effective tax rates and tax expense, liquidity, access to capital, capital return plan, investment strategies, cost management, realignment program, plans and objectives, including those related to our digital practice areas, investment in our business, potential acquisitions, industry trends, customer behaviors and trends, the outcome of regulatory and litigation matters and other statements regarding matters that are not historical facts, are based on our current expectations, estimates and projections, management’s beliefs and certain assumptions made by management, many of which, by their nature, are inherently uncertain and beyond our control. Actual results, performance, achievements and outcomes could differ materially from the results expressed in, or anticipated or implied by, these forward-looking statements. There are a number of important factors that could cause our results to differ materially from those indicated by such forward-looking statements, including:

- economic and political conditions globally and in particular in the markets in which our customers and operations are concentrated;

- our ability to attract, train and retain skilled professionals, including highly skilled technical personnel to satisfy customer demand and senior management to lead our business globally;
- challenges related to growing our business organically as well as inorganically through acquisitions, and our ability to achieve our targeted growth rates;
- our ability to achieve our profitability and capital return goals;
- our ability to meet specified service levels required by certain of our contracts;
- intense and evolving competition in the rapidly changing markets we compete in;
- legal, reputational and financial risks if we fail to protect customer and/or Cognizant data from security breaches or cyberattacks;
- the effectiveness of our business continuity and disaster recovery plans and the potential that our global delivery capacity could be impacted;
- restrictions on visas, in particular in the United States, United Kingdom and European Union, or immigration more generally, which may affect our ability to compete for and provide services to our customers;
- risks related to anti-outsourcing legislation, if adopted, and negative perceptions associated with offshore outsourcing, both of which could impair our ability to serve our customers;
- risks related to complying with the numerous and evolving legal and regulatory requirements to which we are subject in the many jurisdictions in which we operate;
- potential changes in tax laws, or in their interpretation or enforcement, failure by us to adapt our corporate structure and intercompany arrangements to achieve global tax efficiencies or adverse outcomes of tax audits, investigations or proceedings;
- potential exposure to litigation and legal claims in the conduct of our business;
- potential significant expense that would occur if we change our intent not to repatriate Indian accumulated undistributed earnings; and
- the factors set forth in Part I, in the section entitled “[Item 1A. Risk Factors](#)” in this report.

You are advised to consult any further disclosures we make on related subjects in the reports we file with the SEC, including this report in the sections titled “[Part I, Item 1. Business](#),” “[Part I, Item 1A. Risk Factors](#)” and “[Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations](#).” We undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as may be required under applicable securities laws.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

Foreign Currency Risk

We are exposed to foreign currency exchange rate risk in the ordinary course of doing business as we transact or hold a portion of our funds in foreign currencies, particularly the Indian rupee. Additionally, the Brexit Referendum and its effect on the British pound may subject us to increased volatility in foreign currency exchange rate movements. Accordingly, we periodically evaluate the need for hedging strategies, including the use of derivative financial instruments, to mitigate the effect of foreign currency exchange rate fluctuations and expect to continue to use such instruments in the future to reduce foreign currency exposure to appreciation or depreciation in the value of certain foreign currencies. All hedging transactions are authorized and executed pursuant to regularly reviewed policies and procedures.

Revenues from our customers in the United Kingdom, Rest of Europe and Rest of World represented 7.9%, 9.7% and 6.2%, respectively, of our 2018 revenues, and are typically denominated in currencies other than the U.S. dollar. Accordingly, our operating results may be affected by fluctuations in the exchange rates, primarily the Indian rupee, the British pound and the Euro, as compared to the U.S. dollar.

A significant portion of our costs in India are denominated in the Indian rupee, representing approximately 21.5% of our global operating costs during 2018, and are subject to foreign currency exchange rate fluctuations. These foreign currency exchange rate fluctuations have an impact on our results of operations.

We have entered into a series of foreign exchange forward contracts that are designated as cash flow hedges of certain Indian rupee denominated payments in India. These U.S. dollar / Indian rupee hedges are intended to partially offset the impact of movement of exchange rates on future operating costs. As of December 31, 2018, the notional value and weighted average contract rates of these contracts were as follows:

	Notional Value (in millions)	Weighted Average Contract Rate (Indian rupee to U.S. dollar)
2019	\$ 1,388	70.4
2020	780	74.5
Total	<u>\$ 2,168</u>	<u>71.8</u>

As of December 31, 2018, the net unrealized loss on our outstanding foreign exchange forward contracts designated as cash flow hedges was \$4 million. Based upon a sensitivity analysis at December 31, 2018, which estimates the fair value of the contracts based upon market exchange rate fluctuations, a 10.0% change in the foreign currency exchange rate against the U.S. dollar with all other variables held constant would have resulted in a change in the fair value of our foreign exchange forward contracts designated as cash flow hedges of approximately \$207 million.

A portion of our balance sheet is exposed to foreign currency exchange rate fluctuations, which may result in non-operating foreign currency exchange gains or losses upon remeasurement. In 2018, we reported foreign currency exchange losses, exclusive of hedging gains, of approximately \$183 million, which were primarily attributed to the remeasurement of net monetary assets and liabilities denominated in currencies other than the functional currencies of our subsidiaries. As of December 31, 2018, we had \$1,782 million in cash, cash equivalents and investments denominated in Indian rupees. Based upon a sensitivity analysis, a 10.0% change in the Indian rupee exchange rate against the U.S. dollar, with all other variables held constant, would have resulted in a change in the U.S. dollar reported value of these balances and a corresponding non-operating foreign currency exchange gain or loss of approximately \$180 million.

We use foreign exchange forward contracts to provide an economic hedge against balance sheet exposure to certain monetary assets and liabilities denominated in currencies other than the functional currency of the subsidiary. We entered into a series of foreign exchange forward contracts scheduled to mature in 2019. At December 31, 2018, the notional value of these outstanding contracts was \$507 million and the net unrealized loss was \$3 million. Based upon a sensitivity analysis of our foreign exchange forward contracts at December 31, 2018, which estimates the fair value of the contracts based upon market exchange rate fluctuations, a 10.0% change in the foreign currency exchange rate against the U.S. dollar with all other variables held constant would have resulted in a change in the fair value of approximately \$45 million.

Interest Rate Risk

In 2014, we entered into a credit agreement, providing for a \$1,000 million unsecured term loan and a \$750 million unsecured revolving credit facility, which were due to mature in November 2019. In November 2018, we completed a debt refinancing in which we entered into the New Credit Agreement, providing for the New Term Loan, and a \$1,750 million unsecured revolving credit facility, which are due to mature in November 2023. As of December 31, 2018, we have \$750 million outstanding under our New Term Loan and no outstanding notes under the revolving credit facility.

The New Credit Agreement requires interest to be paid, at our option, at either the ABR or the Eurocurrency Rate (each as defined in the New Credit Agreement), plus, in each case, an Applicable Margin (as defined in the New Credit Agreement). Initially, the Applicable Margin is 0.875% with respect to Eurocurrency Rate loans and 0.00% with respect to ABR loans. Subsequently, the Applicable Margin with respect to Eurocurrency Rate loans may range from 0.75% to 1.125%, depending on our public debt ratings (or, if we have not received public debt ratings, from 0.875% to 1.125%, depending on our Leverage Ratio, which is the ratio of indebtedness for borrowed money to Consolidated EBITDA, as defined in the New Credit Agreement). Under the New Credit Agreement, we are required to pay commitment fees on the unused portion of the revolving credit facility, which vary based on our public debt ratings (or, if we have not received public debt ratings, on the Leverage Ratio). Thus, our debt exposes us to market risk from changes in interest rates. We performed a sensitivity analysis to determine the effect of interest rate fluctuations on our interest expense. A 10.0% change in interest rates, with all other variables held constant, would have an immaterial effect on our reported interest expense.

In addition, our available-for-sale and held-to-maturity fixed income securities are subject to market risk from changes in interest rates. As of December 31, 2018, the fair market values of our available-for-sale and held-to-maturity portfolios were \$1,760 million and \$1,070 million, respectively. As of December 31, 2018, a 10% change in interest rates, with all other variables held constant, would have an immaterial effect on the fair market value of our available-for-sale and held-to-maturity investment securities. We typically invest in highly rated securities and our policy generally limits the amount of credit exposure to any one

issuer. Our investment policy requires investments to be investment grade with the objective of minimizing the potential risk of principal loss. We may sell our available-for-sale investments prior to their stated maturities for strategic purposes, in anticipation of credit deterioration or for duration management. Our investment portfolio is comprised primarily of time deposits, mutual funds invested in fixed income securities, Indian rupee denominated commercial paper, Indian rupee denominated international corporate bonds and government debt securities, U.S. dollar denominated corporate bonds, municipal bonds, certificates of deposit, commercial paper, debt issuances by the U.S. government, U.S. government agencies, foreign governments and supranational entities, and asset-backed securities. The asset-backed securities included securities backed by auto loans, credit card receivables and other receivables.

Information provided by the sensitivity analysis of foreign currency risk and interest rate risk does not necessarily represent the actual changes that would occur under normal market conditions.

Item 8. Financial Statements and Supplementary Data

The financial statements required to be filed pursuant to this Item 8 are appended to this Annual Report on Form 10-K. A list of the financial statements filed herewith is found in Part IV, "[Item 15. Exhibits, Financial Statements and Financial Statement Schedule.](#)"

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Our management, under the supervision and with the participation of our chief executive officer and our chief financial officer, evaluated the effectiveness of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of December 31, 2018. Based on this evaluation, our chief executive officer and our chief financial officer concluded that, as of December 31, 2018, our disclosure controls and procedures were effective.

Changes in Internal Control over Financial Reporting

There has been no change in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the fiscal quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

Management's Responsibility for Financial Statements

Our management is responsible for the integrity and objectivity of all information presented in this annual report. The consolidated financial statements were prepared in conformity with accounting principles generally accepted in the United States of America and include amounts based on management's best estimates and judgments. Management believes the consolidated financial statements fairly reflect the form and substance of transactions and that the financial statements fairly represent the Company's financial position and results of operations.

The Audit Committee of the Board of Directors, which is composed solely of independent directors, meets regularly with the Company's independent registered public accounting firm and representatives of management to review accounting, financial reporting, internal control and audit matters, as well as the nature and extent of the audit effort.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is defined in Rule 13a-15(f) and 15d-15(f) of the Exchange Act and is a process designed by, or under the supervision of, our chief executive and chief financial officers and effected by our Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles and includes those policies and procedures that:

- Pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- Provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the Company are being made only in accordance with authorizations of our management and directors; and
- Provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of the Company's assets that could have a material effect on the financial statements.

Our management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2018. In making this assessment, the Company's management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control-Integrated Framework (2013)*.

Based on its evaluation, our management has concluded that, as of December 31, 2018, our internal control over financial reporting was effective. PricewaterhouseCoopers LLP, the independent registered public accounting firm that audited the financial statements included in this annual report, has issued an attestation report on our internal control over financial reporting, as stated in their report which is included on page F-2.

Inherent Limitations of Internal Controls

Because of its inherent limitations, internal control over financial reporting may not prevent or detect all misstatements. Projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Item 9B. Other Information

On February 15, 2019, we announced a resolution of the previously disclosed investigations by the DOJ and SEC focused on whether certain payments relating to Company-owned facilities in India were made in violation of the FCPA and other applicable laws. The resolution required the Company to pay approximately \$28 million to the DOJ and SEC, an amount consistent with the FCPA Accrual recorded during the quarter ended September 30, 2018.

See [Note 2](#) to our consolidated financial statements for additional information on the completion of our internal investigation and the resolution of the investigations by the DOJ and SEC in February 2019.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

The information relating to our executive officers in response to this item is contained in part under the caption “Our Executive Officers” in Part I of this Annual Report on Form 10-K.

We have adopted a written code of ethics, entitled “Core Values and Code of Ethics,” that applies to all of our employees, including our principal executive officer, principal financial officer, principal accounting officer and controller, or persons performing similar functions. We make available our code of ethics free of charge through our website which is located at *www.cognizant.com*. We intend to post on our website all disclosures that are required by law or Nasdaq Stock Market listing standards concerning any amendments to, or waivers from, any provision of our code of ethics.

The remaining information required by this item will be included in our definitive proxy statement for the 2019 Annual Meeting of Stockholders and is incorporated herein by reference to such proxy statement.

Item 11. Executive Compensation

The information required by this item will be included in our definitive proxy statement for the 2019 Annual Meeting of Stockholders and is incorporated herein by reference to such proxy statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

The information required by this item will be included in our definitive proxy statement for the 2019 Annual Meeting of Stockholders and is incorporated herein by reference to such proxy statement.

Item 13. Certain Relationships and Related Transactions, and Director Independence

The information required by this item will be included in our definitive proxy statement for the 2019 Annual Meeting of Stockholders and is incorporated herein by reference to such proxy statement.

Item 14. Principal Accountant Fees and Services

The information required by this item will be included in our definitive proxy statement for the 2019 Annual Meeting of Stockholders and is incorporated herein by reference to such proxy statement.

PART IV

Item 15. Exhibits, Financial Statement Schedules

- (a) (1) Consolidated Financial Statements.
Reference is made to the Index to Consolidated Financial Statements on Page F-1.
- (2) Consolidated Financial Statement Schedule.
Reference is made to the Index to Financial Statement Schedule on Page F-1.
- (3) Exhibits.

Schedules other than as listed above are omitted as not required or inapplicable or because the required information is provided in the consolidated financial statements, including the notes thereto.

EXHIBIT INDEX

<u>Number</u>	<u>Exhibit Description</u>	<u>Incorporated by Reference</u>				<u>Filed or Furnished Herewith</u>
		<u>Form</u>	<u>File No.</u>	<u>Exhibit</u>	<u>Date</u>	
3.1	<u>Restated Certificate of Incorporation, dated June 5, 2018</u>	8-K	000-24429	3.1	6/7/2018	
3.2	<u>Amended and Restated Bylaws, as adopted on September 24, 2018</u>	8-K	000-24429	3.1	9/20/2018	
4.1	<u>Specimen Certificate for shares of Class A common stock</u>	S-4/A	333-101216	4.2	1/30/2003	
10.1†	<u>Form of Indemnification Agreement for Directors and Officers</u>	10-Q	000-24429	10.1	8/7/2013	
10.2†	<u>Form of Amended and Restated Executive Employment and Non-Disclosure, Non-Competition, and Invention Assignment Agreement, between the Company and each of the following Executive Officers: Francisco D'Souza, Rajeev Mehta, Karen McLoughlin, Ramakrishna Prasad Chintamaneni, Matthew Friedrich, James Lennox, Allen Shaheen, Dharmendra Kumar Sinha and Robert Telesmanic</u>	10-K	000-24429	10.3	2/27/2018	
10.3†	<u>Form of Amended and Restated Executive Employment and Non-Disclosure, Non-Competition, and Invention Assignment Agreement, between the Company and each of the following Executive Officers: Ramakrishnan Chandrasekaran, Debashis Chatterjee, Malcolm Frank, Sumithra Gomatam, Gajakarnan Vibushanan Kandiah, Sean Middleton, Santosh Thomas and Srinivasan Veeraraghavachary</u>	10-K	000-24429	10.4	2/26/2013	
10.4†	<u>Offer Letter, by and between the Company and Brian Humphries, acknowledged and agreed November 30, 2018</u>					Filed
10.5†	<u>Amendment to Employment Agreement, by and between the Company and Francisco D'Souza, dated February 1, 2019</u>					Filed
10.6†	<u>Amendment to Employment Agreement, by and between the Company and Rajeev Mehta, dated June 12, 2018</u>	10-Q	000-24429	10.1	8/2/2018	
10.7†	<u>Second Letter Agreement, dated February 4, 2019, by and between the Company and Rajeev Mehta</u>					Filed
10.8†	<u>2004 Employee Stock Purchase Plan (as amended and restated effective as of February 27, 2018)</u>	8-K	000-24429	10.1	6/7/2018	

Number	Exhibit Description	Incorporated by Reference				Filed or Furnished Herewith
		Form	File No.	Exhibit	Date	
10.9†	<u>Form of Stock Option Certificate</u>	10-Q	000-24429	10.1	11/8/2004	
10.10†	<u>Cognizant Technology Solutions Corporation Amended and Restated 2009 Incentive Compensation Plan, effective March 9, 2015</u>	10-Q	000-24429	10.1	5/4/2015	
10.11†	<u>Form of Cognizant Technology Solutions Corporation Stock Option Agreement</u>	8-K	000-24429	10.1	7/6/2009	
10.12†	<u>Form of Cognizant Technology Solutions Corporation Notice of Grant of Stock Option</u>	8-K	000-24429	10.2	7/6/2009	
10.13†	<u>Form of Cognizant Technology Solutions Corporation Restricted Stock Unit Award Agreement Time-Based Vesting</u>	8-K	000-24429	10.3	7/6/2009	
10.14†	<u>Form of Cognizant Technology Solutions Corporation Notice of Award of Restricted Stock Units Time-Based Vesting</u>	8-K	000-24429	10.4	7/6/2009	
10.15†	<u>Form of Cognizant Technology Solutions Corporation Restricted Stock Unit Award Agreement Performance-Based Vesting</u>	8-K	000-24429	10.5	7/6/2009	
10.16†	<u>Form of Cognizant Technology Solutions Corporation Notice of Award of Restricted Stock Units Performance-Based Vesting</u>	8-K	000-24429	10.6	7/6/2009	
10.17†	<u>Form of Restricted Stock Unit Award Agreement Non-Employee Director Deferred Issuance</u>	8-K	000-24429	10.7	7/6/2009	
10.18†	<u>Form of Cognizant Technology Solutions Corporation Notice of Award of Restricted Stock Units Non-Employee Director Deferred Issuance</u>	8-K	000-24429	10.8	7/6/2009	
10.19†	<u>Cognizant Technology Solutions Corporation 2017 Incentive Award Plan</u>	8-K	000-24429	10.1	6/7/2017	
10.20†	<u>Form of Restricted Stock Unit Award Grant Notice</u>	10-Q	000-24429	10.2	8/3/2017	
10.21†	<u>Form of Performance-Based Restricted Stock Unit Award Grant Notice</u>	10-Q	000-24429	10.3	8/3/2017	
10.22†	<u>Form of Restricted Stock Unit Award Grant Notice</u>	10-Q	000-24429	10.4	8/3/2017	
10.23†	<u>Form of Stock Option Grant Notice and Stock Option Agreement</u>	10-Q	000-24429	10.5	8/3/2017	
10.24	<u>Form of Accelerated Stock Repurchase Agreement</u>	8-K	000-24429	10.1	3/14/2017	
10.25	<u>Credit Agreement, dated as of November 5, 2018, among Cognizant Technology Solutions Corporation, Cognizant Worldwide Limited, certain financial institutions party thereto and JPMorgan Chase Bank, N.A., as administrative agent.</u>	8-K	000-24429	10.1	11/9/2018	
10.26	<u>Letter of Declination, dated February 13, 2019, from the U.S. Department of Justice, Criminal Division, to Cognizant Technology Solutions Corporation</u>					Filed
10.27	<u>Offer of Settlement, dated October 11, 2018, by Cognizant Technology Solutions Corporation to the U.S. Securities and Exchange Commission</u>					Filed
21.1	<u>List of subsidiaries of the Company</u>					Filed

<u>Number</u>	<u>Exhibit Description</u>	<u>Incorporated by Reference</u>				<u>Filed or Furnished Herewith</u>
		<u>Form</u>	<u>File No.</u>	<u>Exhibit</u>	<u>Date</u>	
23.1	<u>Consent of PricewaterhouseCoopers LLP</u>					Filed
31.1	<u>Certification Pursuant to Rule 13a-14(a) and 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (Chief Executive Officer)</u>					Filed
31.2	<u>Certification Pursuant to Rule 13a-14(a) and 15d-14(a) of the Exchange Act, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (Chief Financial Officer)</u>					Filed
32.1	<u>Certification Pursuant to 18 U.S.C. Section 1350 (Chief Executive Officer)</u>					Furnished
32.2	<u>Certification Pursuant to 18 U.S.C. Section 1350 (Chief Financial Officer)</u>					Furnished
101.INS	XBRL Instance Document					Filed
101.SCH	XBRL Taxonomy Extension Schema Document					Filed
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document					Filed
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document					Filed
101.LAB	XBRL Taxonomy Extension Label Linkbase Document					Filed
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document					Filed

† A management contract or compensatory plan or arrangement required to be filed as an exhibit pursuant to Item 15(a) (3) of Form 10-K.

Item 16. Form 10-K Summary

None.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION

By: /s/ FRANCISCO D'SOUZA
Francisco D'Souza,
Chief Executive Officer
(Principal Executive Officer)

Date: **February 19, 2019**

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u> /s/ FRANCISCO D'SOUZA </u> Francisco D'Souza	Chief Executive Officer, Vice Chairman of the Board and Director (Principal Executive Officer)	February 19, 2019
<u> /s/ KAREN MCLOUGHLIN </u> Karen McLoughlin	Chief Financial Officer (Principal Financial Officer)	February 19, 2019
<u> /s/ ROBERT TELESMANIC </u> Robert Telesmanic	Controller and Chief Accounting Officer (Principal Accounting Officer)	February 19, 2019
<u> /s/ MICHAEL PATSALOS-FOX </u> Michael Patsalos-Fox	Chairman of the Board and Director	February 19, 2019
<u> /s/ ZEIN ABDALLA </u> Zein Abdalla	Director	February 19, 2019
<u> /s/ MAUREEN BREAKIRON-EVANS </u> Maureen Breakiron-Evans	Director	February 19, 2019
<u> /s/ JONATHAN CHADWICK </u> Jonathan Chadwick	Director	February 19, 2019
<u> /s/ JOHN M. DINEEN </u> John M. Dineen	Director	February 19, 2019
<u> /s/ JOHN N. FOX, JR. </u> John N. Fox, Jr.	Director	February 19, 2019
<u> /s/ JOHN E. KLEIN </u> John E. Klein	Director	February 19, 2019
<u> /s/ LEO S. MACKAY, JR. </u> Leo S. Mackay, Jr.	Director	February 19, 2019
<u> /s/ JOSEPH M. VELLI </u> Joseph M. Velli	Director	February 19, 2019

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
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AND FINANCIAL STATEMENT SCHEDULE

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Consolidated Financial Statements:

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<u>Consolidated Statements of Operations for the years ended December 31, 2018, 2017 and 2016</u>	<u>F-4</u>
<u>Consolidated Statements of Comprehensive Income for the years ended December 31, 2018, 2017 and 2016</u>	<u>F-5</u>
<u>Consolidated Statements of Stockholders' Equity for the years ended December 31, 2018, 2017 and 2016</u>	<u>F-6</u>
<u>Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017 and 2016</u>	<u>F-7</u>
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Financial Statement Schedule:

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Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Cognizant Technology Solutions Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated statements of financial position of Cognizant Technology Solutions Corporation and its subsidiaries (the "Company") as of December 31, 2018 and 2017, and the related consolidated statements of operations, of comprehensive income, of stockholders' equity and of cash flows for each of the three years in the period ended December 31, 2018, including the related notes and financial statement schedule listed in the accompanying index (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 3 to the consolidated financial statements, the Company changed the manner in which it accounts for revenues from contracts with customers in 2018.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

/s/ PricewaterhouseCoopers LLP
New York, New York
February 19, 2019

We have served as the Company's auditor since 1997.

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
CONSOLIDATED STATEMENTS OF FINANCIAL POSITION
(in millions, except par values)

	At December 31,	
	2018	2017
Assets		
Current assets:		
Cash and cash equivalents	\$ 1,161	\$ 1,925
Short-term investments	3,350	3,131
Trade accounts receivable, net of allowances of \$78 and \$65, respectively	3,257	2,865
Unbilled accounts receivable	—	357
Other current assets	909	833
Total current assets	<u>8,677</u>	<u>9,111</u>
Property and equipment, net	1,394	1,324
Goodwill	3,481	2,704
Intangible assets, net	1,150	981
Deferred income tax assets, net	442	418
Long-term investments	80	235
Other noncurrent assets	689	448
Total assets	<u>\$ 15,913</u>	<u>\$ 15,221</u>
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 215	\$ 210
Deferred revenue	286	383
Short-term debt	9	175
Accrued expenses and other current liabilities	2,267	2,071
Total current liabilities	<u>2,777</u>	<u>2,839</u>
Deferred revenue, noncurrent	62	104
Deferred income tax liabilities, net	183	146
Long-term debt	736	698
Long-term income taxes payable	478	584
Other noncurrent liabilities	253	181
Total liabilities	<u>4,489</u>	<u>4,552</u>
Commitments and contingencies (See Note 15)		
Stockholders' equity:		
Preferred stock, \$0.10 par value, 15.0 shares authorized, none issued	—	—
Class A common stock, \$0.01 par value, 1,000 shares authorized, 577 and 588 shares issued and outstanding at December 31, 2018 and 2017, respectively	6	6
Additional paid-in capital	47	49
Retained earnings	11,485	10,544
Accumulated other comprehensive income (loss)	(114)	70
Total stockholders' equity	<u>11,424</u>	<u>10,669</u>
Total liabilities and stockholders' equity	<u>\$ 15,913</u>	<u>\$ 15,221</u>

The accompanying notes are an integral part of the consolidated financial statements.

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(in millions, except per share data)

	Year Ended December 31,		
	2018	2017	2016
Revenues	\$ 16,125	\$ 14,810	\$ 13,487
Operating expenses:			
Cost of revenues (exclusive of depreciation and amortization expense shown separately below)	9,838	9,152	8,108
Selling, general and administrative expenses	3,026	2,769	2,731
Depreciation and amortization expense	460	408	359
Income from operations	2,801	2,481	2,289
Other income (expense), net:			
Interest income	177	133	115
Interest expense	(27)	(23)	(19)
Foreign currency exchange gains (losses), net	(152)	67	(30)
Other, net	(2)	(3)	2
Total other income (expense), net	(4)	174	68
Income before provision for income taxes	2,797	2,655	2,357
Provision for income taxes	(698)	(1,153)	(805)
Income from equity method investments	2	2	1
Net income	\$ 2,101	\$ 1,504	\$ 1,553
Basic earnings per share	\$ 3.61	\$ 2.54	\$ 2.56
Diluted earnings per share	\$ 3.60	\$ 2.53	\$ 2.55
Weighted average number of common shares outstanding—Basic	582	593	607
Dilutive effect of shares issuable under stock-based compensation plans	2	2	3
Weighted average number of common shares outstanding—Diluted	584	595	610

The accompanying notes are an integral part of the consolidated financial statements.

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(in millions)

	Year Ended December 31,		
	2018	2017	2016
Net income	\$ 2,101	\$ 1,504	\$ 1,553
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	(65)	111	(59)
Change in unrealized gains and losses on cash flow hedges	(118)	76	51
Change in unrealized losses on available-for-sale investment securities	—	(3)	—
Other comprehensive income (loss)	(183)	184	(8)
Comprehensive income	\$ 1,918	\$ 1,688	\$ 1,545

The accompanying notes are an integral part of the consolidated financial statements.

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in millions, except per share data)

	Class A Common Stock		Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total
	Shares	Amount				
Balance, December 31, 2015	609	\$ 6	\$ 453	\$ 8,925	\$ (106)	\$ 9,278
Net income	—	—	—	1,553	—	1,553
Other comprehensive income (loss)	—	—	—	—	(8)	(8)
Common stock issued, stock-based compensation plans	8	—	176	—	—	176
Tax benefit, stock-based compensation plans	—	—	24	—	—	24
Stock-based compensation expense	—	—	217	—	—	217
Repurchases of common stock	(9)	—	(512)	—	—	(512)
Balance, December 31, 2016	608	6	358	10,478	(114)	10,728
Net income	—	—	—	1,504	—	1,504
Other comprehensive income (loss)	—	—	—	—	184	184
Common stock issued, stock-based compensation plans	9	—	189	—	—	189
Stock-based compensation expense	—	—	221	—	—	221
Repurchases of common stock	(29)	—	(719)	(1,170)	—	(1,889)
Dividends declared, \$0.45 per share	—	—	—	(268)	—	(268)
Balance, December 31, 2017	588	6	49	10,544	70	10,669
Cumulative effect of changes in accounting principle ⁽¹⁾	—	—	—	122	(1)	121
Net income	—	—	—	2,101	—	2,101
Other comprehensive income (loss)	—	—	—	—	(183)	(183)
Common stock issued, stock-based compensation plans	6	—	181	—	—	181
Stock-based compensation expense	—	—	267	—	—	267
Repurchases of common stock	(17)	—	(450)	(811)	—	(1,261)
Dividends declared, \$0.80 per share	—	—	—	(471)	—	(471)
Balance, December 31, 2018	577	\$ 6	\$ 47	\$ 11,485	\$ (114)	\$ 11,424

(1) Reflects the adoption of accounting standards as described in [Note 1](#) and [Note 3](#).

The accompanying notes are an integral part of the consolidated financial statements.

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS
(in millions)

	Year Ended December 31,		
	2018	2017	2016
Cash flows from operating activities:			
Net income	\$ 2,101	\$ 1,504	\$ 1,553
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	498	443	379
Provision for doubtful accounts	13	15	12
Deferred income taxes	8	124	(91)
Stock-based compensation expense	267	221	217
Other	112	(86)	46
Changes in assets and liabilities:			
Trade accounts receivable	(365)	(249)	(330)
Other current assets	216	(181)	(104)
Other noncurrent assets	(224)	(89)	(59)
Accounts payable	(4)	16	6
Deferred revenue, current and noncurrent	(86)	18	(38)
Other current and noncurrent liabilities	56	671	54
Net cash provided by operating activities	<u>2,592</u>	<u>2,407</u>	<u>1,645</u>
Cash flows from investing activities:			
Purchases of property and equipment	(377)	(284)	(300)
Purchases of available-for-sale investment securities	(1,630)	(3,120)	(4,231)
Proceeds from maturity or sale of available-for-sale investment securities	1,838	3,404	3,982
Purchases of held-to-maturity investment securities	(1,363)	(1,221)	(54)
Proceeds from maturity of held-to-maturity investment securities	1,164	404	15
Purchases of other investments	(513)	(385)	(884)
Proceeds from maturity or sale of other investments	365	836	843
Payments for business combinations, net of cash acquired, and equity and cost method investments	(1,111)	(216)	(334)
Net cash (used in) investing activities	<u>(1,627)</u>	<u>(582)</u>	<u>(963)</u>
Cash flows from financing activities:			
Issuance of common stock under stock-based compensation plans	181	189	176
Repurchases of common stock	(1,261)	(1,889)	(512)
Repayment of term loan borrowings and capital lease obligations	(91)	(95)	(57)
Net change in notes outstanding under the revolving credit facility	(75)	75	(350)
Proceeds from debt modification	25	—	—
Debt issuance costs	(4)	—	—
Dividends paid	(468)	(265)	—
Net cash (used in) financing activities	<u>(1,693)</u>	<u>(1,985)</u>	<u>(743)</u>
Effect of exchange rate changes on cash and cash equivalents	(36)	51	(30)
(Decrease) in cash and cash equivalents	(764)	(109)	(91)
Cash and cash equivalents, beginning of year	1,925	2,034	2,125
Cash and cash equivalents, end of period	<u>\$ 1,161</u>	<u>\$ 1,925</u>	<u>\$ 2,034</u>
Supplemental information:			
Cash paid for income taxes during the year	<u>\$ 597</u>	<u>\$ 587</u>	<u>\$ 845</u>
Cash interest paid during the year	<u>\$ 21</u>	<u>\$ 21</u>	<u>\$ 16</u>

The accompanying notes are an integral part of the consolidated financial statements.

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(Dollars in millions, except share data)

Note 1 — Business Description and Summary of Significant Accounting Policies

The terms “Cognizant,” “we,” “our,” “us” and “the Company” refer to Cognizant Technology Solutions Corporation and its subsidiaries unless the context indicates otherwise.

Description of Business. We are one of the world’s leading professional services companies, transforming clients’ business, operating and technology models for the digital era. Our industry-based, consultative approach helps customers envision, build and run more innovative and efficient businesses. Our services include digital services and solutions, consulting, application development, systems integration, application testing, application maintenance, infrastructure services and business process services. Digital services are becoming an increasingly important part of our portfolio of services and solutions and are often integrated or delivered along with our other services. We tailor our services and solutions to specific industries and use an integrated global delivery model that employs customer service teams based at customer locations and delivery teams located at customer locations and dedicated global and regional delivery centers.

Basis of Presentation, Principles of Consolidation and Use of Estimates. The consolidated financial statements are presented in accordance with generally accepted accounting principles in the United States of America (“GAAP”) and reflect the consolidated financial position, results of operations, comprehensive income and cash flows of our consolidated subsidiaries for all periods presented. All intercompany balances and transactions have been eliminated in consolidation.

The preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts in the consolidated financial statements and accompanying disclosures. We evaluate our estimates on a continuous basis. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances. The actual amounts may vary from the estimates used in the preparation of the accompanying consolidated financial statements.

Cash and Cash Equivalents and Investments. Cash and cash equivalents consist of all cash balances, including money market funds and certificates of deposits and commercial paper that have a maturity, at the date of purchase, of 90 days or less.

We determine the appropriate classification of our investments in marketable securities at the date of purchase and reevaluate such designation at each balance sheet date. We have classified and accounted for our marketable debt securities as either available-for-sale or held-to-maturity. After consideration of our risk versus reward objectives, as well as our liquidity requirements, we may sell our available-for-sale securities prior to their stated maturities. We classify these marketable securities with maturities at the date of purchase beyond 90 days as short-term investments based on their highly liquid nature and because such marketable securities represent an investment of cash that is available for current operations. Our held-to-maturity investment securities are financial instruments for which we have the intent and ability to hold to maturity and we classify these securities with maturities less than one year as short-term investments. Any held-to-maturity investment securities with maturities beyond one year from the balance sheet date are classified as noncurrent.

Available-for-sale securities are reported at fair value with changes in unrealized gains and losses recorded as a separate component of accumulated other comprehensive income (loss) until realized. We determine the cost of the securities sold based on the specific identification method. Held-to-maturity securities are reported at amortized cost. Time deposits with financial institutions are valued at cost, which approximates fair value.

Interest and amortization of premiums and discounts for debt securities are included in interest income. On a quarterly basis, we evaluate our available-for-sale and held-to-maturity investments for possible other-than-temporary impairment by reviewing quantitative and qualitative factors. If we do not intend to sell the security or it is not more likely than not that we will be required to sell the security before recovery of our amortized cost, we evaluate quantitative and qualitative criteria to determine whether we expect to recover the amortized cost basis of the security. If we do not expect to recover the entire amortized cost basis of the security, we consider the security to be other-than-temporarily impaired and we record the difference between the security’s amortized cost basis and its recoverable amount in earnings and the difference between the security’s recoverable amount and fair value in other comprehensive income. If we intend to sell the security or it is more likely than not that we will be required to sell the security before recovery of its amortized cost basis, the security is also considered other-than-temporarily impaired and we recognize the entire difference between the security’s amortized cost basis and its fair value in earnings.

Short-term Financial Assets and Liabilities. Cash and certain cash equivalents, trade receivables, accounts payable and other accrued liabilities are short-term in nature and, accordingly, their carrying values approximate fair value.

Property and Equipment. Property and equipment are stated at cost, net of accumulated depreciation. Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets. Leasehold improvements are amortized on a straight-line basis over the shorter of the term of the lease or the estimated useful life of the improvement. In India, leasehold land is leased by us from the government of India with lease terms ranging up to 99 years. Lease payments are made at the inception of the lease agreement and amortized over the lease term. Maintenance and repairs are expensed as incurred, while renewals and betterments are capitalized. Deposits paid towards acquisition of long-lived assets and the cost of assets not put in use before the balance sheet date are disclosed under the caption "Capital work-in-progress" in [Note 7](#).

Internal Use Software. We capitalize certain costs that are incurred to purchase, develop and implement internal-use software during the application development phase, which primarily include coding, testing and certain data conversion activities. Capitalized costs are amortized on a straight-line basis over the useful life of the software. Costs incurred in performing planning and post-implementation activities are expensed as incurred.

Software to be Sold, Leased or Marketed. We capitalize costs incurred after technological feasibility is reached but before software is available for general release to customers, which primarily include coding and testing activities. Once the product is ready for general release, capitalized costs are amortized over the useful life of the software.

Business Combinations. We account for business combinations using the acquisition method, which requires the identification of the acquirer, the determination of the acquisition date and the allocation of the purchase price paid by the acquirer to the identifiable tangible and intangible assets acquired, the liabilities assumed, including any contingent consideration and any noncontrolling interest in the acquiree at their acquisition date fair values. Goodwill represents the excess of the purchase price over the fair value of net assets acquired, including the amount assigned to identifiable intangible assets. Identifiable intangible assets with finite lives are amortized over their useful lives. Acquisition-related costs are expensed in the periods in which the costs are incurred. The results of operations of acquired businesses are included in our consolidated financial statements from the acquisition date.

Equity Method Investments. Equity investments that give us the ability to exercise significant influence, but not control, over an investee are accounted for using the equity method of accounting and recorded in the caption "Long-term investments" on our consolidated statements of financial position. Equity method investments are initially recorded at cost. We periodically review the carrying value of our equity method investments to determine if there has been an other-than-temporary decline in carrying value. The Company's proportionate share of the net income or loss of the investee is recorded in the caption "Income from equity method investments" on our consolidated statements of operations. The investment balance is increased or decreased for cash contributions or distributions to or from these investees.

Long-lived Assets and Finite-lived Intangible Assets. We review long-lived assets and certain finite-lived identifiable intangibles for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset may not be recoverable. We recognize an impairment loss when the sum of undiscounted expected future cash flows is less than the carrying amount of such assets. The impairment loss is determined as the amount by which the carrying amount of the asset exceeds the fair value of the asset. Intangible assets consist primarily of customer relationships and developed technology, which are being amortized on a straight-line basis over their estimated useful lives.

Goodwill and Indefinite-lived Intangible Assets. We evaluate goodwill and indefinite-lived intangible assets for impairment at least annually, or as circumstances warrant. Goodwill is evaluated at the reporting unit level by comparing the fair value of the reporting unit with its carrying amount including goodwill. An impairment of goodwill exists if the carrying amount of the reporting unit exceeds its fair value. The impairment loss is the amount by which the carrying amount exceeds the reporting unit's fair value, limited to the total amount of goodwill allocated to that reporting unit. For indefinite-lived intangible assets, if our annual qualitative assessment indicates that it is more-likely-than-not that an indefinite-lived intangible asset is impaired, we test the assets for impairment by comparing the fair value of such assets to their carrying value. If an impairment is indicated, a write down to the fair value of indefinite-lived intangible asset is recorded.

Stock Repurchase Program. Under the Board of Directors authorized stock repurchase program, the Company is authorized to repurchase its Class A common stock through open market purchases, including under a trading plan adopted pursuant to Rule 10b5-1 of the Exchange Act, or in private transactions, including through accelerated stock repurchase agreements ("ASRs") entered into with financial institutions, in accordance with applicable federal securities laws. We account for the repurchased shares as constructively retired. Shares are returned to the status of authorized and unissued shares at the time of repurchase or in the periods they are delivered, if repurchased under an ASR. To reflect share repurchases in the consolidated statements of financial position, we (1) reduce common stock for the par value of the shares, (2) reduce additional paid-in capital for the amount in excess

of par during the period in which the shares are repurchased and (3) record any residual amount in excess of available additional paid-in capital to retained earnings. Upfront payments related to ASRs are accounted for as a reduction to stockholders' equity in the consolidated statements of financial position in the period the payments are made.

Revenue Recognition. We recognize revenues as we transfer control of deliverables (products, solutions and services) to our customers in an amount reflecting the consideration to which we expect to be entitled. To recognize revenues, we apply the following five step approach: (1) identify the contract with a customer, (2) identify the performance obligations in the contract, (3) determine the transaction price, (4) allocate the transaction price to the performance obligations in the contract, and (5) recognize revenues when a performance obligation is satisfied. We account for a contract when it has approval and commitment from all parties, the rights of the parties are identified, payment terms are identified, the contract has commercial substance and collectability of consideration is probable. We apply judgment in determining the customer's ability and intention to pay based on a variety of factors including the customer's historical payment experience.

For performance obligations where control is transferred over time, revenues are recognized based on the extent of progress towards completion of the performance obligation. The selection of the method to measure progress towards completion requires judgment and is based on the nature of the deliverables to be provided.

Revenues related to fixed-price contracts for application development and systems integration services, consulting or other technology services are recognized as the service is performed using the cost to cost method, under which the total value of revenues is recognized on the basis of the percentage that each contract's total labor cost to date bears to the total expected labor costs. Revenues related to fixed-price application maintenance, testing and business process services are recognized based on our right to invoice for services performed for contracts in which the invoicing is representative of the value being delivered. If our invoicing is not consistent with value delivered, revenues are recognized as the service is performed based on the cost to cost method described above. The cost to cost method requires estimation of future costs, which is updated as the project progresses to reflect the latest available information; such estimates and changes in estimates involve the use of judgment. The cumulative impact of any revision in estimates is reflected in the financial reporting period in which the change in estimate becomes known and any anticipated losses on contracts are recognized immediately.

Revenues related to fixed-price hosting and infrastructure services are recognized based on our right to invoice for services performed for contracts in which the invoicing is representative of the value being delivered. If our invoicing is not consistent with value delivered, revenues are recognized on a straight-line basis unless revenues are earned and obligations are fulfilled in a different pattern. The revenue recognition method applied to the types of contracts described above provides the most faithful depiction of performance towards satisfaction of our performance obligations; for example, the cost to cost method is used when the value of services provided to the customer is best represented by the costs expended to deliver those services.

Revenues related to our time-and-materials, transaction-based or volume-based contracts are recognized over the period the services are provided either using an output method such as labor hours, or a method that is otherwise consistent with the way in which value is delivered to the customer.

Revenues related to our non-hosted software license arrangements that do not require significant modification or customization of the underlying software are recognized when the software is delivered as control is transferred at a point in time. For software license arrangements that require significant functionality enhancements or modification of the software, revenues for the software license and related services are recognized as the services are performed in accordance with the methods applicable to application development and systems integration services described above. In software hosting arrangements, the rights provided to the customer, such as ownership of a license, contract termination provisions and the feasibility of the client to operate the software, are considered in determining whether the arrangement includes a license or a service. Sales and usage-based fees promised in exchange for licenses of intellectual property are not recognized as revenue until the uncertainty related to the variable amounts is resolved. Revenues related to software maintenance and support are generally recognized on a straight-line basis over the contract period.

Incentive revenues, volume discounts, or any other form of variable consideration is estimated using either the sum of probability weighted amounts in a range of possible consideration amounts (expected value), or the single most likely amount in a range of possible consideration amounts (most likely amount), depending on which method better predicts the amount of consideration to which we may be entitled. We include in the transaction price variable consideration only to the extent it is probable that a significant reversal of revenues recognized will not occur when the uncertainty associated with the variable consideration is resolved. Our estimates of variable consideration and determination of whether to include estimated amounts in the transaction price may involve judgment and are based largely on an assessment of our anticipated performance and all information that is reasonably available to us.

Revenues also include the reimbursement of out-of-pocket expenses. Our warranties generally provide a customer with assurance that the related deliverable will function as the parties intended because it complies with agreed-upon specifications and is therefore not considered an additional performance obligation in the contract.

We may enter into arrangements that consist of multiple performance obligations. Such arrangements may include any combination of our deliverables. To the extent a contract includes multiple promised deliverables, we apply judgment to determine whether promised deliverables are capable of being distinct and are distinct in the context of the contract. If these criteria are not met, the promised deliverables are accounted for as a combined performance obligation. For arrangements with multiple distinct performance obligations, we allocate consideration among the performance obligations based on their relative standalone selling price. Standalone selling price is the price at which we would sell a promised good or service separately to the customer. When not directly observable, we typically estimate standalone selling price by using the expected cost plus a margin approach. We typically establish a standalone selling price range for our deliverables, which is reassessed on a periodic basis or when facts and circumstances change.

We assess the timing of the transfer of goods or services to the customer as compared to the timing of payments to determine whether a significant financing component exists. As a practical expedient, we do not assess the existence of a significant financing component when the difference between payment and transfer of deliverables is a year or less. If the difference in timing arises for reasons other than the provision of finance to either the customer or us, no financing component is deemed to exist. The primary purpose of our invoicing terms is to provide customers with simplified and predictable ways of purchasing our services, not to receive or provide financing from or to customers. We do not consider set up or transition fees paid upfront by our customers to represent a financing component, as such fees are required to encourage customer commitment to the project and protect us from early termination of the contract.

Our contracts may be modified to add, remove or change existing performance obligations. The accounting for modifications to our contracts involves assessing whether the services added to an existing contract are distinct and whether the pricing is at the standalone selling price. Services added that are not distinct are accounted for on a cumulative catch up basis, while those that are distinct are accounted for prospectively, either as a separate contract if the additional services are priced at the standalone selling price, or as a termination of the existing contract and creation of a new contract if not priced at the standalone selling price. Services added to our application development and systems integration service contracts are typically not distinct, while services added to our other contracts, including application maintenance, testing and business process services contracts, are typically distinct.

From time to time, we may enter into arrangements with third party suppliers to resell products or services. In such cases, we evaluate whether we are the principal (i.e., report revenues on a gross basis) or agent (i.e., report revenues on a net basis). In doing so, we first evaluate whether we control the good or service before it is transferred to the customer. If we control the good or service before it is transferred to the customer, we are the principal; if not, we are the agent. Determining whether we control the good or service before it is transferred to the customer may require judgment.

Prior to the adoption of ASC 606 on January 1, 2018, revenues were earned and recognized when all of the following criteria were met: evidence of an arrangement existed, the price was fixed or determinable, the services had been rendered and collectability was reasonably assured. Contingent or incentive revenues were recognized when the contingency was satisfied and we concluded the amounts were earned. Volume discounts were recorded as a reduction of revenues as services were provided. Revenues also included the reimbursement of out-of-pocket expenses.

Trade Receivables, Contract Assets and Contract Liabilities. We classify our right to consideration in exchange for deliverables as either a receivable or a contract asset. A receivable is a right to consideration that is unconditional (i.e., only the passage of time is required before payment is due). For example, we recognize a receivable for revenues related to our time and materials and transaction or volume-based contracts when earned regardless of whether amounts have been billed. We present such receivables in "Trade accounts receivable, net" in our consolidated statements of financial position at their net estimated realizable value. A contract asset is a right to consideration that is conditional upon factors other than the passage of time. Contract assets are presented in "Other current assets" in our consolidated statements of financial position and primarily relate to unbilled amounts on fixed-price contracts utilizing the cost to cost method of revenue recognition. Our contract liabilities, or deferred revenue, consist of advance payments and billings in excess of revenues recognized. We classify deferred revenue as current or noncurrent based on the timing of when we expect to recognize the revenues. The noncurrent portion of deferred revenue is included in "Other noncurrent liabilities" in our consolidated statements of financial position.

Our contract assets and liabilities are reported on a net basis by contract at the end of each reporting period. The difference between the opening and closing balances of our contract assets and deferred revenues primarily results from the timing difference between our performance obligations and the customer's payment. We receive payments from customers based on the terms established in our contracts, which vary by contract type.

Allowance for Doubtful Accounts. We maintain an allowance for doubtful accounts to provide for the estimated amount of receivables that may not be collected. The allowance is based upon an assessment of customer creditworthiness, historical payment experience, the age of outstanding receivables and other applicable factors. We evaluate the collectability of our trade accounts receivable on an on-going basis and write off accounts when they are deemed to be uncollectable.

Cost to Fulfill. Recurring operating costs for contracts with customers are recognized as incurred. Certain eligible, nonrecurring costs incurred in the initial phases of our contracts (i.e., set-up or transition costs) are capitalized when such costs (1) relate directly to the contract, (2) generate or enhance resources of the Company that will be used in satisfying the performance obligation in the future, and (3) are expected to be recovered. These costs are expensed ratably over the estimated life of the customer relationship, including expected contract renewals. In determining the estimated life of the customer relationship, we evaluate the average contract term, on a portfolio basis by nature of the services to be provided, and apply judgment to evaluate the rate of technological and industry change. Capitalized amounts are monitored regularly for impairment. Impairment losses are recorded when projected remaining undiscounted operating cash flows are not sufficient to recover the carrying amount of the capitalized costs to fulfill.

Stock-Based Compensation. Stock-based compensation expense for awards of equity instruments to employees and non-employee directors is determined based on the grant date fair value of those awards. We recognize these compensation costs net of an estimated forfeiture rate over the requisite service period of the award. Forfeitures are estimated on the date of grant and revised if actual or expected forfeiture activity differs materially from original estimates.

Foreign Currency. The assets and liabilities of our foreign subsidiaries whose functional currency is not the U.S. dollar are translated into U.S. dollars from functional currencies at current exchange rates while revenues and expenses are translated from functional currencies at average monthly exchange rates. The resulting translation adjustments are recorded in the caption "Accumulated other comprehensive income (loss)" on the consolidated statements of financial position.

Foreign currency transactions and balances are those that are denominated in a currency other than the subsidiary's functional currency. The subsidiary's functional currency is the currency of the primary economic environment in which the subsidiary operates. The U.S. dollar is the functional currency for some of our foreign subsidiaries. For these subsidiaries, transactions and balances denominated in the local currency are foreign currency transactions. Foreign currency transactions and balances related to non-monetary assets and liabilities are remeasured to the functional currency of the subsidiary at historical exchange rates while monetary assets and liabilities are remeasured to the functional currency of the subsidiary at current exchange rates. Foreign currency exchange gains or losses from remeasurement are included in the caption "Foreign currency exchange gain (losses), net" on our consolidated statements of operations together with gains or losses on our undesignated foreign currency hedges.

Derivative Financial Instruments. Derivative financial instruments are recorded on our consolidated statements of financial position as either an asset or liability measured at its fair value as of the reporting date. Our derivative financial instruments consist of foreign exchange forward contracts. For derivative financial instruments to qualify for hedge accounting, the following criteria must be met: (1) the hedging instrument must be designated as a hedge; (2) the hedged exposure must be specifically identifiable and must expose us to risk; and (3) it must be expected that a change in fair value of the derivative financial instrument and an opposite change in the fair value of the hedged exposure will have a high degree of correlation. Changes in our derivatives' fair values are recognized in net income unless specific hedge accounting and documentation criteria are met (i.e., the instruments are designated and accounted for as hedges). We record the effective portion of the unrealized gains and losses on our derivative financial instruments that are designated as cash flow hedges in the caption "Accumulated other comprehensive income (loss)" in the consolidated statements of financial position. Any ineffectiveness or excluded portion of a designated cash flow hedge is recognized in net income. Upon occurrence of the hedged transaction, the gains and losses on the derivative are recognized in net income.

Income Taxes. We provide for income taxes utilizing the asset and liability method of accounting. Under this method, deferred income taxes are recorded to reflect the tax consequences in future years of differences between the tax basis of assets and liabilities and their financial reporting amounts at each balance sheet date, based on enacted tax laws and statutory tax rates applicable to the periods in which the differences are expected to affect taxable income. If it is determined that it is more likely than not that future tax benefits associated with a deferred income tax asset will not be realized, a valuation allowance is provided. The effect of a change in tax rates on deferred income tax assets and liabilities is recognized in the provision for income taxes in the period that includes the enactment date. Beginning in 2017, the differences between actual tax benefits realized on employee stock awards and estimated tax benefits at date of grant are adjusted to our provision for income taxes upon vesting or exercise of the stock award.

Our provision for income taxes also includes the impact of provisions established for uncertain income tax positions, as well as any related penalties and interest. We adjust these reserves in light of changing facts and circumstances, such as the closing of

a tax audit. To the extent that the final outcome of these matters differs from the amounts recorded, such differences will impact the provision for income taxes in the period in which such determination is made.

Earnings Per Share ("EPS"). Basic EPS excludes dilution and is computed by dividing earnings available to common stockholders by the weighted-average number of common shares outstanding for the period. Diluted EPS includes all potential dilutive common stock in the weighted average shares outstanding. We exclude from the calculation of diluted EPS options with exercise prices that are greater than the average market price and shares related to stock-based awards whose combined exercise price and unamortized fair value were greater in each of those periods than the average market price of our common stock for the period, because their effect would be anti-dilutive. We excluded less than 1 million of anti-dilutive shares in each of 2018, 2017 and 2016 from our diluted EPS calculation. We include performance stock unit awards in the dilutive potential common shares when they become contingently issuable per the authoritative guidance and exclude the awards when they are not contingently issuable.

Recently Adopted Accounting Pronouncements

Date Issued and Topic	Date Adopted and Method	Description	Impact
May 2014 Revenue	January 1, 2018 Modified Retrospective	The new standard, as amended, sets forth a single comprehensive model for recognizing and reporting revenues. The standard also requires additional financial statement disclosures that enable users to understand the nature, amount, timing and uncertainty of revenues and cash flows relating to customer contracts. The standard allows for two methods of adoption: the full retrospective adoption, which requires the standard to be applied to each prior period presented, or the modified retrospective adoption, which requires the cumulative effect of adoption to be recognized as an adjustment to opening retained earnings in the period of adoption.	See Note 3 for the impact of adoption of this standard.
November 2016 Statement of Cash Flows	January 1, 2018 Retrospective	This update requires restricted cash to be included with cash and cash equivalents when reconciling the beginning and ending amounts on the statement of cash flows. It also requires a reconciliation of such totals to the amounts on the statement of financial position and disclosure as to the nature of the restrictions.	There were no restricted cash balances as of December 31, 2018. The adoption of this update had no impact on our financial statements for the year ended December 31, 2018.
February 2018 Income Statement - Reporting Comprehensive Income	January 1, 2018 In the period of adoption	This update provides an option for entities to reclassify stranded tax effects caused by the recently-enacted Tax Cuts and Jobs Act ("Tax Reform Act") from accumulated other comprehensive income to retained earnings.	We have early adopted this update as of January 1, 2018. The adoption resulted in a decrease of \$1 million in accumulated other comprehensive income and a corresponding increase of \$1 million to opening retained earnings.

New Accounting Pronouncements

Date Issued and Topic	Effective Date	Description	Impact
February 2016 Leases	January 1, 2019	The new standard replaces the existing guidance on leases and requires the lessee to recognize a right-of-use ("ROU") asset and a lease liability for all leases with lease terms equal to or greater than twelve months. For finance leases, the lessee would recognize interest expense and amortization of the ROU asset, and for operating leases, the lessee would recognize total lease expense on a straight-line basis. The standard offers several practical expedients for transition and certain expedients specific to lessees or lessors. The standard allows for two methods of adoption: retrospective to each prior reporting period presented with the cumulative effect of adoption recognized at the beginning of the earliest period presented or retrospective to the beginning of the period of adoption through a cumulative-effect adjustment (the effective date method).	We expect to adopt the new standard on January 1, 2019 using the effective date method. Upon adoption, we expect to recognize additional lease assets and liabilities of approximately \$750 million to \$800 million. We intend to elect the package of practical expedients that permits us not to reassess prior conclusions related to contracts containing leases, lease classification and initial direct costs. We do not expect to elect the use of the hindsight practical expedient. The new standard also provides practical expedients for an entity's ongoing accounting. We expect to elect the short-term lease recognition exemption. This means, for those leases that qualify, we will not recognize ROU assets or lease liabilities in transition or on an ongoing basis. We also expect to elect the practical expedient that permits us not to separate lease and non-lease components for all of our leases.
March 2017 Nonrefundable Fees and Other Costs	January 1, 2019	This update shortens the amortization period for certain callable debt securities held at a premium to the earliest call date. The amendments do not require an accounting change for securities held at a discount. Upon adoption, entities will be required to use a modified retrospective transition with the cumulative effect adjustment recognized to retained earnings as of the beginning of the period of adoption.	We do not expect the adoption of this update to have a material impact on our financial statements.
August 2018 Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement ("CCA") that is a Service Contract	January 1, 2020	This update aligns the accounting for costs incurred to implement a CCA that is a service arrangement with the guidance on capitalizing costs associated with developing or obtaining internal-use software. The update clarifies that a customer should capitalize certain implementation costs and subsequently amortize such costs over the term of the hosting arrangement as operating expenses.	We do not expect the adoption of this update to have a material impact on our financial statements.

Note 2 — Internal Investigation and Related Matters

In February 2019, we completed our internal investigation focused on whether certain payments relating to Company-owned facilities in India were made improperly and in violation of the U.S. Foreign Corrupt Practices Act ("FCPA") and other applicable laws. The investigation was conducted under the oversight of the Audit Committee, with the assistance of outside counsel. During the year ended December 31, 2016, we recorded out-of-period corrections related to \$4 million of potentially improper payments between 2009 and 2016 that had been previously capitalized when they should have been expensed. These out-of-period corrections were not material to any previously issued financial statements. There were no adjustments recorded during 2018 and 2017 related to the amounts then under investigation.

On February 15, 2019, we announced a resolution of the previously disclosed investigations by the U.S. Department of Justice ("DOJ") and the U.S. Securities and Exchange Commission ("SEC") into the matters that were the subject of our internal investigation. The resolution required the Company to pay approximately \$28 million to the DOJ and SEC, an amount

consistent with the Company's accrual ("FCPA Accrual") recorded during the quarter ended September 30, 2018 and reflected in the caption "Accrued expenses and other current liabilities" in our consolidated statement of financial position.

Note 3 — Revenues

Adoption of Accounting Standards Codification ("ASC") Topic 606, "Revenue from Contracts with Customers" ("New Revenue Standard")

On January 1, 2018, we adopted the New Revenue Standard using the modified retrospective method applied to contracts that were not completed as of January 1, 2018. Results for reporting periods beginning on or after January 1, 2018 are presented under the New Revenue Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting policies. For contracts that were modified before the effective date, the Company aggregated the effect of all contract modifications prior to identifying performance obligations and allocating transaction price in accordance with the practical expedient ASC 606-10-65-1-(f)-4. Upon adoption of the New Revenue Standard on January 1, 2018, we recorded a net increase to opening retained earnings of approximately \$121 million, after a tax impact of \$37 million. The impact of adoption primarily relates to (1) changes in the method used to measure progress on our fixed-price application maintenance, consulting and business process services contracts, (2) the longer period of amortization for costs to fulfill a contract, (3) the timing of revenue recognition and allocation of purchase price on our software license contracts, (4) the reclassification of balances representing receivables, as defined by the New Revenue Standard, from "Unbilled accounts receivable" to "Trade accounts receivable, net" in our consolidated statement of financial position, (5) the reclassification of balances representing contract assets, as defined by the New Revenue Standard, from "Unbilled accounts receivable" to "Other current assets" in our consolidated statement of financial position, as well as (6) the income tax impact of the above items, as applicable.

The following tables compare the financial statement line items materially affected by the adoption of the New Revenue Standard as of and for the year ended December 31, 2018 to the pro-forma amounts had the previous guidance been in effect ("Pro-forma Amounts"):

	December 31, 2018		
	As Reported	Pro-forma Amounts (in millions)	Impacts of the New Revenue Standard
Assets:			
Trade accounts receivable, net ^{(1), (2)}	\$ 3,257	\$ 3,115	\$ 142
Unbilled accounts receivable ^{(1), (3)}	—	485	(485)
Other current assets ^{(2), (3)}	909	604	305
Total current assets			(38)
Other noncurrent assets ⁽⁴⁾	689	615	74
Total assets			\$ 36
Liabilities:			
Deferred revenue, current ⁽²⁾	\$ 286	\$ 498	\$ (212)
Total current liabilities			(212)
Deferred revenue, noncurrent ⁽²⁾	62	108	(46)
Deferred income tax liabilities, net ⁽⁵⁾	183	118	65
Total liabilities			(193)
Stockholders' equity:			
Retained earnings	11,485	11,256	229
Total stockholders' equity			229
Total liabilities and stockholders' equity			\$ 36

	Year Ended December 31, 2018		
	As Reported	Pro-forma Amounts (in millions)	Impacts of the New Revenue Standard
Revenues ⁽²⁾	\$ 16,125	\$ 16,029	\$ 96
Cost of revenues ⁽⁴⁾	9,838	9,876	(38)
Selling, general and administrative expenses	3,026	3,026	—
Depreciation and amortization expense	460	460	—
Income from operations	2,801	2,667	134
Other income (expense), net	(4)	(5)	1
Income before provision for income taxes ⁽⁵⁾	2,797	2,662	135
Provision for income taxes	(698)	(671)	(27)
Income (loss) from equity method investment	2	2	—
Net income	\$ 2,101	\$ 1,993	\$ 108
Basic earnings per share	\$ 3.61	\$ 3.42	\$ 0.19
Diluted earnings per share	\$ 3.60	\$ 3.41	\$ 0.19

- (1) Reflects the reclassification of balances representing receivables, as defined by the New Revenue Standard, from Unbilled accounts receivable to Trade accounts receivable, net.
- (2) Reflects the impact of changes in the method used to measure progress on our fixed-price application maintenance, consulting and business process services contracts and the timing of revenue recognition and allocation of purchase price on our software license contracts.
- (3) Reflects the reclassification of balances representing contract assets, as defined by the New Revenue Standard, from Unbilled accounts receivable to Other current assets.
- (4) Reflects the impact of a longer period of amortization for costs to fulfill a contract as well as a change in the methodology of assessing the recoverability of such costs.
- (5) Reflects the income tax impact of the above items.

Costs to Fulfill

The following table presents information related to the capitalized costs to fulfill, such as set-up or transition activities, for the year ended December 31, 2018. Costs to fulfill are recorded in Other noncurrent assets in our consolidated statements of financial position and the amortization expense of costs to fulfill is included in Cost of revenues in our consolidated statements of operations. Costs to obtain contracts were immaterial for the periods disclosed.

	Costs to Fulfill
	(in millions)
Balance - January 1, 2018	\$ 303
Amortization expense	(70)
Costs capitalized	170
Other	(3)
Balance - December 31, 2018	<u>\$ 400</u>

Contract Balances

A contract asset is a right to consideration that is conditional upon factors other than the passage of time. Contract assets are presented in Other current assets in our consolidated statements of financial position and primarily relate to unbilled amounts on fixed-price contracts utilizing the cost to cost method of revenue recognition. The table below shows significant movements in contract assets:

	Contract Assets
	(in millions)
Balance - January 1, 2018	\$ 306
Revenues recognized during the period but not billed	285
Amounts reclassified to accounts receivable	(282)
Other	(4)
Balance - December 31, 2018	<u>\$ 305</u>

The table below shows significant movements in the deferred revenue balances (current and noncurrent) for the period disclosed:

	Deferred Revenue
	(in millions)
Balance - January 1, 2018	\$ 431
Amounts billed but not recognized as revenues	204
Revenues recognized related to the opening balance of deferred revenue	(284)
Other	(3)
Balance - December 31, 2018	<u>\$ 348</u>

Revenues recognized during the year ended December 31, 2018 for performance obligations satisfied or partially satisfied in previous periods were immaterial.

Remaining Performance Obligations

As of December 31, 2018, the aggregate amount of transaction price allocated to remaining performance obligations, was \$1,852 million, of which approximately 68% is expected to be recognized as revenues within 2 years. Disclosure is not required for performance obligations that meet any of the following criteria:

- (1) contracts with a duration of one year or less as determined under ASC 606,
- (2) contracts for which we recognize revenues based on the right to invoice for services performed,
- (3) variable consideration allocated entirely to a wholly unsatisfied performance obligation or to a wholly unsatisfied promise to transfer a distinct good or service that forms part of a single performance obligation in accordance with ASC 606-10-25-14(b), for which the criteria in ASC 606-10-32-40 have been met, or
- (4) variable consideration in the form of a sales-based or usage based royalty promised in exchange for a license of intellectual property.

Many of our performance obligations meet one or more of these exemptions and therefore are not included in the remaining performance obligation amount disclosed above.

Disaggregation of Revenues

The table below presents disaggregated revenues from contracts with customers by customer location, service line and contract-type for each of our business segments. We believe this disaggregation best depicts how the nature, amount, timing and uncertainty of our revenues and cash flows are affected by industry, market and other economic factors.

	Year Ended December 31, 2018				
	Financial Services	Healthcare	Products and Resources	Communications, Media and Technology	Total
	(in millions)				
Revenues					
Geography:					
North America	\$ 4,162	\$ 4,254	\$ 2,397	\$ 1,480	\$ 12,293
United Kingdom	481	91	358	344	1,274
Rest of Europe	666	270	440	187	1,563
Europe - Total	1,147	361	798	531	2,837
Rest of World	536	53	220	186	995
Total	<u>\$ 5,845</u>	<u>\$ 4,668</u>	<u>\$ 3,415</u>	<u>\$ 2,197</u>	<u>\$ 16,125</u>
Service line:					
Consulting and technology services ⁽¹⁾	\$ 3,571	\$ 2,553	\$ 2,024	\$ 1,161	\$ 9,309
Outsourcing services ⁽²⁾	2,274	2,115	1,391	1,036	6,816
Total	<u>\$ 5,845</u>	<u>\$ 4,668</u>	<u>\$ 3,415</u>	<u>\$ 2,197</u>	<u>\$ 16,125</u>
Type of contract:					
Time and materials	\$ 3,762	\$ 1,836	\$ 1,506	\$ 1,366	\$ 8,470
Fixed-price	1,859	1,852	1,521	734	5,966
Transaction or volume-based	224	980	388	97	1,689
Total	<u>\$ 5,845</u>	<u>\$ 4,668</u>	<u>\$ 3,415</u>	<u>\$ 2,197</u>	<u>\$ 16,125</u>

(1) Our consulting and technology services include consulting, application development, systems integration, and application testing services as well as software solutions and related services.

(2) Our outsourcing services include application maintenance, infrastructure and business process services.

Note 4 — Business Combinations

All acquisitions completed during the three years ended December 31, 2018, 2017 and 2016 were not individually material to our operations or cash flow. Accordingly, pro forma results have not been presented. We have allocated the purchase price related to these transactions to tangible and intangible assets and liabilities, including non-deductible goodwill, based on their estimated fair values. The primary items that generated goodwill are the value of the acquired assembled workforces and synergies between the acquired companies and us, neither of which qualify as an amortizable intangible asset.

2018

In 2018, we completed five business combinations for total consideration of approximately \$1,122 million. These acquisitions were (a) Bolder Healthcare Solutions ("Bolder"), a provider of revenue cycle management solutions to the healthcare industry in the United States; (b) Hedera Consulting, a business advisory and data analytics service provider in Belgium and the Netherlands; (c) Softvision, a digital engineering and consulting company with significant operations in Romania and India that focuses on agile development of custom cloud-based software and platforms for customers primarily in the United States; (d) ATG, a United States based consulting company that helps companies plan, implement and optimize automated cloud-based quote-to-cash business processes and technologies; and (e) SaaSfocus, a Salesforce services provider in Australia.

The allocation of purchase price to the fair value of the aggregate assets acquired and liabilities assumed was as follows:

	Softvision	Bolder	Others	Total	Weighted Average Useful Life
	(dollars in millions)				
Cash	\$ 4	\$ 7	\$ 4	\$ 15	
Current assets	54	32	15	101	
Property, plant and equipment and other noncurrent assets	7	7	1	15	
Non-deductible goodwill	385	335	76	796	
Customer relationship intangible assets	133	113	30	276	10.3 years
Other intangible assets	9	17	1	27	3.7 years
Trademark	—	9	—	9	Indefinite
Current liabilities	(47)	(11)	(9)	(67)	
Noncurrent liabilities	(4)	(37)	(9)	(50)	
Purchase price	<u>\$ 541</u>	<u>\$ 472</u>	<u>\$ 109</u>	<u>\$ 1,122</u>	

For acquisitions completed in 2018, the allocation is preliminary and will be finalized as soon as practicable within the measurement period, but in no event later than one year following the date of acquisition.

2017

In 2017, we completed five business combinations for total consideration of approximately \$233 million. These acquisitions were (a) an intelligent products and solutions company based in Japan specializing in digital strategy, product design and engineering, the internet of things, and enterprise mobility that expands our digital transformation portfolio and capabilities, (b) a U.S. healthcare management consulting firm that strengthens our consulting service offerings within the healthcare consulting market, (c) a leading national provider of business process services to the U.S. government healthcare market that further strengthens our business process-as-a-service solutions for government and public health programs, (d) a provider of digital experience and marketing solutions for some of the world's most recognized brands and an independent Adobe partner in Europe that will enhance our ability to deliver business critical digital experience solutions, and (e) an independent full-service digital agency in the UK specializing in customer experience, digital strategy, technology and content creation that will enhance and expand our digital interactive expertise in experience design, human science-driven insights and analytics.

The allocation of purchase price to the fair value of the aggregate assets acquired and liabilities assumed was as follows:

	Fair Value (in millions)	Weighted Average Useful Life
Cash	\$ 8	
Current assets	47	
Property, plant and equipment and other noncurrent assets	19	
Non-deductible goodwill	125	
Customer relationship intangible assets	147	10.6 years
Other intangible assets	4	2.4 years
Current liabilities	(50)	
Noncurrent liabilities	(67)	
Purchase price	<u>\$ 233</u>	

2016

In 2016, we completed eight business combinations for total consideration of approximately \$287 million. These transactions included (a) an acquisition of a global consulting and technology services company that strengthens and expands our digital capabilities to deliver cloud-based application services, (b) three acquisitions of delivery centers spanning several industries such as oil and gas services, steel and metal products, and banking and insurance to enhance our delivery capabilities across Europe along with multi-year service agreements, (c) an acquisition of tangible property, an assembled workforce and a multi-year service agreement which qualifies as a business combination under accounting guidance, (d) an acquisition of a global consulting company that offers digital innovation, strategy, design and technology services, (e) an acquisition of a digital marketing and customer

experience agency that expands our digital business capabilities across Europe, and (f) an acquisition of an Australia-based consulting, business transformation and technology services provider in the insurance industry.

The allocation of purchase price to the fair value of the aggregate assets acquired and liabilities assumed was as follows:

	<u>Fair Value</u> (in millions)	<u>Weighted Average Useful Life</u>
Cash	\$ 17	
Current assets	84	
Property, plant and equipment and other noncurrent assets	53	
Non-deductible goodwill	157	
Customer relationship intangible assets	199	6.6 years
Other intangible assets	1	3.3 years
Current liabilities	(173)	
Noncurrent liabilities	(51)	
Purchase price	<u>\$ 287</u>	

Note 5 — Realignment Charges

In 2017, we began a realignment of our business to accelerate the shift to digital services and solutions while improving the overall efficiency of our operations. As part of this realignment, we incurred charges that included severance costs, lease termination costs and advisory fees related to non-routine shareholder matters and charges related to the development of our realignment and capital return plans. The total costs related to the realignment are reported in "Selling, general and administrative expenses" in our consolidated statements of operations. The accrued realignment costs as of December 31, 2018 and 2017 were immaterial.

Realignment charges were as follows:

	<u>Years Ended December 31,</u>	
	<u>2018</u>	<u>2017</u>
	(in millions)	
Severance costs	\$ 18	\$ 53
Advisory fees	—	18
Lease termination costs	1	1
Total realignment costs	<u>\$ 19</u>	<u>\$ 72</u>

There were no realignment charges incurred in 2016.

Note 6 — Investments

Our investments were as follows as of December 31:

	2018	2017
	(in millions)	
Short-term investments:		
Equity investment securities	\$ 25	\$ 25
Available-for-sale investment securities	1,760	1,972
Held-to-maturity investment securities	1,065	745
Time deposits	500 ⁽¹⁾	389
Total short-term investments	<u>\$ 3,350</u>	<u>\$ 3,131</u>
Long-term investments:		
Equity and cost method investments	\$ 74	\$ 74
Held-to-maturity investment securities	6	161
Total long-term investments	<u>\$ 80</u>	<u>\$ 235</u>

(1) Includes \$423 million in restricted time deposits as of December 31, 2018. See [Note 11](#).

Equity Investment Securities

Our equity investment securities consist of a U.S. dollar denominated investment in a fixed income mutual fund. Unrealized losses for the years ended December 31, 2018 and 2017 were immaterial. The value of the fixed income mutual fund is based on the net asset value ("NAV") of the fund, with appropriate consideration of the liquidity and any restrictions on disposition of our investment in the fund. There were no realized gains or losses on equity securities during the years ended December 31, 2018 and 2017.

Available-for-Sale Investment Securities

Our available-for-sale investment securities consist of U.S. dollar denominated investments primarily in U.S. Treasury notes, U.S. government agency debt securities, municipal debt securities, non-U.S. government debt securities, U.S. and international corporate bonds, certificates of deposit, commercial paper, debt securities issued by supranational institutions, and asset-backed securities, including securities backed by auto loans, credit card receivables, and other receivables. Our investment guidelines are to purchase securities which are investment grade at the time of acquisition. We monitor the credit ratings of the securities in our portfolio on an ongoing basis.

The amortized cost, gross unrealized gains and losses and fair value of our available-for-sale investment securities were as follows at December 31:

	2018			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in millions)			
U.S. Treasury and agency debt securities	\$ 630	\$ 1	\$ (6)	\$ 625
Corporate and other debt securities	420	—	(4)	416
Certificates of deposit and commercial paper	296	—	—	296
Asset-backed securities	336	—	(2)	334
Municipal debt securities	90	—	(1)	89
Total available-for-sale investment securities	<u>\$ 1,772</u>	<u>\$ 1</u>	<u>\$ (13)</u>	<u>\$ 1,760</u>

	2017			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in millions)			
U.S. Treasury and agency debt securities	\$ 667	\$ —	\$ (6)	\$ 661
Corporate and other debt securities	439	—	(2)	437
Certificates of deposit and commercial paper	450	—	—	450
Asset-backed securities	297	—	(2)	295
Municipal debt securities	130	—	(1)	129
Total available-for-sale investment securities	<u>\$ 1,983</u>	<u>\$ —</u>	<u>\$ (11)</u>	<u>\$ 1,972</u>

The fair value and related unrealized losses of our available-for-sale investment securities in a continuous unrealized loss position for less than 12 months and for 12 months or longer were as follows as of December 31:

	2018					
	Less than 12 Months		12 Months or More		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
	(in millions)					
U.S. Treasury and agency debt securities	\$ 84	\$ —	\$ 446	\$ (6)	\$ 530	\$ (6)
Corporate and other debt securities	108	(1)	254	(3)	362	(4)
Certificates of deposit and commercial paper	295	—	—	—	295	—
Asset-backed securities	93	—	179	(2)	272	(2)
Municipal debt securities	17	—	64	(1)	81	(1)
Total	<u>\$ 597</u>	<u>\$ (1)</u>	<u>\$ 943</u>	<u>\$ (12)</u>	<u>\$ 1,540</u>	<u>\$ (13)</u>

	2017					
	Less than 12 Months		12 Months or More		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
	(in millions)					
U.S. Treasury and agency debt securities	\$ 519	\$ (4)	\$ 124	\$ (2)	\$ 643	\$ (6)
Corporate and other debt securities	297	(1)	126	(1)	423	(2)
Certificates of deposit and commercial paper	49	—	—	—	49	—
Asset-backed securities	193	(1)	94	(1)	287	(2)
Municipal debt securities	107	(1)	18	—	125	(1)
Total	<u>\$ 1,165</u>	<u>\$ (7)</u>	<u>\$ 362</u>	<u>\$ (4)</u>	<u>\$ 1,527</u>	<u>\$ (11)</u>

The unrealized losses for the above securities as of December 31, 2018 and 2017 are primarily attributable to changes in interest rates. At each reporting date, we perform an evaluation of impaired available-for-sale securities to determine if the unrealized losses are other-than-temporary. As of December 31, 2018, we do not consider any of the investments to be other-than-temporarily impaired. The gross unrealized gains and losses in the above tables were recorded, net of tax, in "Accumulated other comprehensive income (loss)" in our consolidated statements of financial position.

The contractual maturities of our fixed income available-for-sale investment securities as of December 31, 2018 are set forth in the following table:

	Amortized Cost	Fair Value
	(in millions)	
Due within one year	\$ 569	\$ 567
Due after one year up to two years	544	537
Due after two years up to three years	267	265
Due after three years	56	57
Asset-backed securities	336	334
Total available-for-sale investment securities	<u>\$ 1,772</u>	<u>\$ 1,760</u>

Asset-backed securities were excluded from the maturity categories because the actual maturities may differ from the contractual maturities since the underlying receivables may be prepaid without penalties. Further, actual maturities of debt securities may differ from those presented above since certain obligations provide the issuer the right to call or prepay the obligation prior to scheduled maturity without penalty.

Proceeds from sales of available-for-sale investment securities and the gross gains and losses that have been included in earnings as a result of those sales were as follows:

	2018	2017	2016
	(in millions)		
Proceeds from sales of available-for-sale investment securities	<u>\$ 1,285</u>	<u>\$ 2,922</u>	<u>\$ 3,541</u>
Gross gains	\$ —	\$ 1	\$ 5
Gross losses	(4)	(3)	(4)
Net realized (losses) gains on sales of available-for-sale investment securities	<u>\$ (4)</u>	<u>\$ (2)</u>	<u>\$ 1</u>

Held-to-Maturity Investment Securities

Our held-to-maturity investment securities consist of Indian rupee denominated investments primarily in commercial paper, international corporate bonds and government debt securities. Our investment guidelines are to purchase securities that are investment grade at the time of acquisition. We monitor the credit ratings of the securities in our portfolio on an ongoing basis.

The amortized cost, gross unrealized gains and losses and fair value of held-to-maturity investment securities were as follows at December 31:

	2018			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in millions)			
Short-term investments:				
Corporate and other debt securities	\$ 546	\$ —	\$ —	\$ 546
Commercial paper	519	—	(1)	518
Total short-term held-to-maturity investments	<u>1,065</u>	<u>—</u>	<u>(1)</u>	<u>1,064</u>
Long-term investments:				
Corporate and other debt securities	6	—	—	6
Total held-to-maturity investment securities	<u>\$ 1,071</u>	<u>\$ —</u>	<u>\$ (1)</u>	<u>\$ 1,070</u>

	2017			
	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
	(in millions)			
Short-term investments:				
Corporate and other debt securities	\$ 346	\$ —	\$ (1)	\$ 345
Commercial paper	399	—	(2)	397
Total short-term held-to-maturity investments	745	—	(3)	742
Long-term investments:				
Corporate and other debt securities	161	—	(1)	160
Total held-to-maturity investment securities	<u>\$ 906</u>	<u>\$ —</u>	<u>\$ (4)</u>	<u>\$ 902</u>

The fair value and related unrealized losses of held-to-maturity investment securities in a continuous unrealized loss position for less than 12 months and for 12 months or longer were as follows as of December 31:

	2018					
	Less than 12 Months		12 Months or More		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
	(in millions)					
Corporate and other debt securities	\$ 263	\$ —	\$ 57	\$ —	\$ 320	\$ —
Commercial paper	268	(1)	—	—	268	(1)
Total	<u>\$ 531</u>	<u>\$ (1)</u>	<u>\$ 57</u>	<u>\$ —</u>	<u>\$ 588</u>	<u>\$ (1)</u>

	2017					
	Less than 12 Months		12 Months or More		Total	
	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses	Fair Value	Unrealized Losses
	(in millions)					
Corporate and other debt securities	\$ 473	\$ (2)	\$ —	\$ —	\$ 473	\$ (2)
Commercial paper	394	(2)	—	—	394	(2)
Total	<u>\$ 867</u>	<u>\$ (4)</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 867</u>	<u>\$ (4)</u>

At each reporting date, the Company performs an evaluation of held-to-maturity securities to determine if the unrealized losses are other-than-temporary. We do not consider any of the investments to be other-than-temporarily impaired as of December 31, 2018.

The contractual maturities of our fixed income held-to-maturity investment securities as of December 31, 2018 are set forth in the following table:

	Amortized Cost	Fair Value
	(in millions)	
Due within one year	\$ 1,065	\$ 1,064
Due after one year up to two years	6	6
Total held-to-maturity investment securities	<u>\$ 1,071</u>	<u>\$ 1,070</u>

During the years ended December 31, 2018 and 2017, there were no transfers of investments between our available-for-sale and held-to-maturity investment portfolios.

Equity and Cost Method Investments

As of December 31, 2018 and 2017, we had equity method investments of \$66 million and \$67 million, respectively, which primarily consist of a 49% ownership interest in a strategic consulting firm specializing in the use of human sciences to help business leaders better understand customer behavior. As of December 31, 2018 and 2017, we had cost method investments of \$8 million and \$7 million, respectively.

Note 7 — Property and Equipment, net

Property and equipment were as follows as of December 31:

	<u>Estimated Useful Life (Years)</u>	<u>2018</u>	<u>2017</u>
		(in millions)	
Buildings	30	\$ 839	\$ 836
Computer equipment	3 – 5	412	364
Computer software	3 – 8	721	594
Furniture and equipment	5 – 9	639	511
Land		19	19
Leasehold land	lease term	60	63
Capital work-in-progress		156	145
Leasehold improvements	Shorter of the lease term or the life of the leased asset	338	308
Sub-total		<u>3,184</u>	<u>2,840</u>
Accumulated depreciation and amortization		(1,790)	(1,516)
Property and equipment, net		<u>\$ 1,394</u>	<u>\$ 1,324</u>

Depreciation and amortization expense related to property and equipment was \$347 million, \$313 million and \$266 million for the years ended December 31, 2018, 2017 and 2016, respectively.

The gross amount of property and equipment recorded under capital leases was \$73 million and \$44 million as of December 31, 2018 and 2017, respectively. Accumulated amortization and amortization expense related to capital lease assets were immaterial for the periods presented.

The gross amount of property and equipment recorded for software to be sold, leased or marketed in the caption "Computer software" above was \$85 million and \$52 million, as of December 31, 2018 and 2017, respectively. Accumulated amortization for software to be sold, leased or marketed was \$24 million and \$12 million as of December 31, 2018 and 2017, respectively. Amortization expense for software to be sold, leased or marketed recorded as property and equipment was \$14 million for the year ended December 31, 2018 and was immaterial for the years ended December 31, 2017 and 2016.

Note 8 — Goodwill and Intangible Assets, net

Changes in goodwill by our reportable segments were as follows for the years ended December 31, 2018 and 2017:

Segment	January 1, 2018	Goodwill Additions and Adjustments	Foreign Currency Translation Adjustments	December 31, 2018
	(in millions)			
Financial Services	\$ 265	\$ 152	\$ (6)	\$ 411
Healthcare	2,106	365	(2)	2,469
Products and Resources	240	152	(8)	384
Communications, Media and Technology	93	126	(2)	217
Total goodwill	<u>\$ 2,704</u>	<u>\$ 795</u>	<u>\$ (18)</u>	<u>\$ 3,481</u>

Segment	January 1, 2017	Goodwill Additions and Adjustments	Foreign Currency Translation Adjustments	December 31, 2017
	(in millions)			
Financial Services	\$ 227	\$ 27	\$ 11	\$ 265
Healthcare	2,089	13	4	2,106
Products and Resources	159	72	9	240
Communications, Media and Technology	79	11	3	93
Total goodwill	<u>\$ 2,554</u>	<u>\$ 123</u>	<u>\$ 27</u>	<u>\$ 2,704</u>

To better align our annual goodwill impairment assessment with the timing of our budget process, we elected to change the date of our annual goodwill impairment assessment from December 31st to October 31st. Based on our most recent goodwill impairment assessment performed during 2018, we concluded the goodwill in each of our reporting units were not at risk of impairment. We have not recognized any impairment losses on our goodwill balances to-date.

Components of intangible assets were as follows as of December 31:

	2018			2017		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
(in millions)						
Customer relationships	\$ 1,277	\$ (398)	\$ 879	\$ 1,005	\$ (304)	\$ 701
Developed technology	355	(187)	168	333	(140)	193
Indefinite life trademarks	72	—	72	63	—	63
Other	64	(33)	31	51	(27)	24
Total intangible assets	<u>\$ 1,768</u>	<u>\$ (618)</u>	<u>\$ 1,150</u>	<u>\$ 1,452</u>	<u>\$ (471)</u>	<u>\$ 981</u>

Other than certain trademarks with indefinite lives, our intangible assets have finite lives and, as such, are subject to amortization. Amortization of intangible assets totaled \$151 million for 2018, \$130 million for 2017 and \$113 million for 2016. Of these amounts, during 2018, 2017 and 2016, amortization of \$38 million, \$35 million and \$20 million, respectively, relating to customer relationship intangible assets attributable to direct revenue contracts with sellers of acquired businesses was recorded as a reduction of revenues.

Estimated amortization related to our existing intangible assets for the next five years is as follows:

Year	Amount
(in millions)	
2019	\$ 167
2020	158
2021	153
2022	137
2023	83

Note 9 — Accrued Expenses and Other Current Liabilities

Accrued expenses and other current liabilities were as follows as of December 31:

	2018	2017
	(in millions)	
Compensation and benefits	\$ 1,216	\$ 1,272
Customer volume and other incentives	323	289
Derivative financial instruments	25	5
FCPA Accrual	28	—
Income taxes	162	48
Professional fees	110	100
Travel and entertainment	34	32
Other	369	325
Total accrued expenses and other current liabilities	<u>\$ 2,267</u>	<u>\$ 2,071</u>

Note 10 — Debt

In 2014, we entered into a credit agreement with a commercial bank syndicate, (as amended, the "Credit Agreement"), providing for a \$1,000 million unsecured term loan and a \$750 million unsecured revolving credit facility, which were due to mature in November 2019. In November 2018, we completed a debt refinancing in which we entered into a credit agreement with a new commercial bank syndicate (the "New Credit Agreement") providing for a \$750 million unsecured term loan (the "New Term Loan") and a \$1,750 million unsecured revolving credit facility, which are due to mature in November 2023. We are required under the New Credit Agreement to make scheduled quarterly principal payments on the New Term Loan, beginning in December 2019.

The New Credit Agreement requires interest to be paid, at our option, at either the ABR or the Eurocurrency Rate (each as defined in the New Credit Agreement), plus, in each case, an Applicable Margin (as defined in the New Credit Agreement). Initially, the Applicable Margin is 0.875% with respect to Eurocurrency Rate loans and 0.00% with respect to ABR loans. Subsequently, the Applicable Margin with respect to Eurocurrency Rate loans may range from 0.75% to 1.125%, depending on our public debt ratings (or, if we have not received public debt ratings, from 0.875% to 1.125%, depending on our Leverage Ratio, which is the ratio of indebtedness for borrowed money to Consolidated EBITDA, as defined in the New Credit Agreement). Under the New Credit Agreement, we are required to pay commitment fees on the unused portion of the revolving credit facility, which vary based on our public debt ratings (or, if we have not received public debt ratings, on the Leverage Ratio). As the interest rates on our New Term Loan and any notes outstanding under the revolving credit facility are variable, the fair value of our debt balances approximates their carrying value as of December 31, 2018 and 2017.

The New Credit Agreement contains customary affirmative and negative covenants as well as a financial covenant. The financial covenant is tested at the end of each fiscal quarter and requires us to maintain a Leverage Ratio not in excess of 3.50 to 1.00, or for a period of up to four quarters following certain material acquisitions, 3.75 to 1.00. We were in compliance with all debt covenants and representations of the New Credit Agreement as of December 31, 2018.

Short-term Debt

The following summarizes our short-term debt balances as of December 31:

	2018		2017	
	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate
	(in millions)		(in millions)	
Notes outstanding under revolving credit facility	\$ —	not applicable	\$ 75	4.5%
Term loan - current maturities	9	3.3%	100	2.4%
Total short-term debt	<u>\$ 9</u>		<u>\$ 175</u>	

Long-term Debt

The following summarizes our long-term debt balances as of December 31:

	2018	2017
	(in millions)	
Term loan	\$ 750	\$ 800
Less:		
Current maturities	(9)	(100)
Deferred financing costs	(5)	(2)
Long-term debt, net of current maturities	<u>\$ 736</u>	<u>\$ 698</u>

The following represents the schedule of maturities of our term loan:

Year	Amounts (in millions)
2019	\$ 9
2020	38
2021	38
2022	38
2023	627
	<u>\$ 750</u>

Note 11 — Income Taxes

Income before provision for income taxes shown below is based on the geographic location to which such income was attributed for years ended December 31:

	2018	2017	2016
	(in millions)		
United States	\$ 947	\$ 810	\$ 752
Foreign	1,850	1,845	1,605
Income before provision for income taxes	<u>\$ 2,797</u>	<u>\$ 2,655</u>	<u>\$ 2,357</u>

The provision for income taxes consisted of the following components for the years ended December 31:

	2018	2017	2016
	(in millions)		
Current:			
Federal and state	\$ 241	\$ 767	\$ 544
Foreign	449	262	352
Total current provision	<u>690</u>	<u>1,029</u>	<u>896</u>
Deferred:			
Federal and state	1	102	(44)
Foreign	7	22	(47)
Total deferred provision (benefit)	<u>8</u>	<u>124</u>	<u>(91)</u>
Total provision for income taxes	<u>\$ 698</u>	<u>\$ 1,153</u>	<u>\$ 805</u>

During 2017, the United States enacted the Tax Reform Act, which significantly revised the U.S. corporate income tax law for tax years beginning after December 31, 2017 by (among other provisions):

- reducing the U.S. federal statutory corporate income tax rate from 35% to 21% for tax years beginning after December 31, 2017;
- implementing a modified territorial tax system that includes a one-time transition tax on all accumulated undistributed earnings of foreign subsidiaries;
- providing for a full deduction on future dividends received from foreign affiliates;

- imposing a U.S. income tax on global intangible low-taxed income ("GILTI"); and
- disallowing certain deductions to foreign affiliates under the base erosion anti-avoidance tax ("BEAT").

In 2017, in accordance with the SEC Staff Accounting Bulletin No. 118 - Income Tax Accounting Implications of the Tax Cuts and Jobs Act, we recorded a one-time provisional net income tax expense of \$617 million. During 2018, we recognized a \$5 million reduction to the provision for income taxes as we finalized our calculation of this one-time net income tax expense bringing the final one-time cost to \$612 million. We elected to pay the transition tax on undistributed earnings in installments through the year 2024. Additionally, we have adopted an accounting policy to include the tax on GILTI in the year it is incurred. During 2018, the state of New Jersey enacted comprehensive budget legislation that included various changes to the state's tax laws. This legislation did not have a material effect on our income tax provision for the fourth quarter or the full year.

As a result of the enactment of the Tax Reform Act, our historical and future foreign earnings are no longer subject to U.S. federal income taxes upon repatriation, beyond the one-time transition tax. We therefore reevaluated our assertion that our foreign earnings would be indefinitely reinvested and concluded that our Indian earnings will continue to be indefinitely reinvested while historical accumulated undistributed earnings of our foreign subsidiaries, other than our Indian subsidiaries, are available for repatriation to the United States. Our assertion that our earnings in India continue to be indefinitely reinvested is consistent with our ongoing strategy to expand our Indian operations, including through infrastructure investments. As of December 31, 2018, the amount of unrepatriated Indian earnings was approximately \$4,679 million. If all of our accumulated unrepatriated Indian earnings were to be repatriated, based on our current interpretation of India tax law, we estimate that we would incur an additional income tax expense of approximately \$980 million. This estimate is subject to change based on tax legislation developments in India and other jurisdictions as well as judicial and interpretive developments of applicable tax laws.

We are involved in an ongoing dispute with the Indian Income Tax Department ("ITD") in connection with which we received a notice in March 2018 asserting that the ITD is owed additional taxes on our previously disclosed 2016 India Cash Remittance, which was the transaction undertaken by our principal operating subsidiary in India ("CTS India") to repurchase shares from its shareholders, which are non-Indian Cognizant entities, valued at \$2.8 billion. As a result of that transaction, undertaken pursuant to a plan approved by the Madras High Court in Chennai, India, we previously paid \$135 million in Indian income taxes, which we believe are all the applicable taxes owed for this transaction under Indian law. The ITD is asserting that we owe an additional 33 billion Indian rupees (\$475 million at the December 31, 2018 exchange rate) related to the 2016 India Cash Remittance. In addition to the dispute on the 2016 India Cash Remittance, we are involved in another ongoing dispute with the ITD relating to a 2013 transaction undertaken by CTS India to repurchase shares from its shareholders valued at \$523 million (the two disputes collectively referred to as the "ITD Dispute"), for which we also believe we have paid all the applicable taxes owed. Accordingly, we have not recorded any reserves for these matters as of December 31, 2018. The ITD Dispute is currently pending before the Madras High Court, and no final decision has been reached.

In March 2018, the ITD placed an attachment on certain of our India bank accounts, relating to the 2016 India Cash Remittance. In April 2018, the Madras High Court granted our application for a stay of the actions of the ITD and lifted the ITD's attachment of our bank accounts. As part of the interim stay order, we have deposited 5 billion Indian rupees (\$71 million at the December 31, 2018 exchange rate) representing 15% of the disputed tax amount related to the 2016 India Cash Remittance, with the ITD. This amount is presented in "Other current assets" on our consolidated statement of financial position. In addition, in April 2018 the court placed a lien on certain time deposits of CTS India in the amount of 28 billion Indian rupees (\$404 million at the December 31, 2018 exchange rate), which is the remainder of the disputed tax amount related to the 2016 India Cash Remittance. The affected time deposits are considered restricted assets and we have reported them in "Short-term investments" on our consolidated statement of financial position. As of December 31, 2018, the restricted time deposits balance was \$423 million, including accumulated interest. There were no restricted time deposits as of December 31, 2017.

The reconciliation between our effective income tax rate and the U.S. federal statutory rate were as follows for the years ended December 31:

	<u>2018</u>	<u>%</u>	<u>2017</u>	<u>%</u>	<u>2016</u>	<u>%</u>
	(Dollars in millions)					
Tax expense, at U.S. federal statutory rate	\$ 587	21.0	\$ 929	35.0	\$ 825	35.0
State and local income taxes, net of federal benefit	56	2.0	39	1.5	42	1.8
Non-taxable income for Indian tax purposes	(146)	(5.2)	(216)	(8.2)	(203)	(8.6)
Rate differential on foreign earnings	206	7.4	(76)	(2.9)	(55)	(2.3)
Net impact related to the implementation of the Tax Reform Act	(5)	(0.2)	617	23.2	—	—
India Cash Remittance	—	—	—	—	238	10.1
Recognition of previously unrecognized income tax benefits related to uncertain tax positions	(12)	(0.4)	(73)	(2.7)	(16)	(0.7)
Credits and other incentives	(19)	(0.7)	(37)	(1.4)	(57)	(2.4)
Other	31	1.1	(30)	(1.1)	31	1.3
Total provision for income taxes	<u>\$ 698</u>	25.0	<u>\$ 1,153</u>	43.4	<u>\$ 805</u>	34.2

The significant components of deferred income tax assets and liabilities recorded on the consolidated statements of financial position were as follows as of December 31:

	<u>2018</u>	<u>2017</u>
	(in millions)	
Deferred income tax assets:		
Net operating losses	\$ 13	\$ 15
Revenue recognition	51	55
Compensation and benefits	133	125
Stock-based compensation	17	14
Minimum alternative tax ("MAT") and other credits	340	369
Other accrued expenses	60	22
	<u>614</u>	<u>600</u>
Less: valuation allowance	(11)	(10)
Deferred income tax assets, net	<u>603</u>	<u>590</u>
Deferred income tax liabilities:		
Depreciation and amortization	256	209
Deferred costs	79	65
Other	9	44
Deferred income tax liabilities	<u>344</u>	<u>318</u>
Net deferred income tax assets	<u>\$ 259</u>	<u>\$ 272</u>

At December 31, 2018, we had foreign and U.S. net operating loss carryforwards of approximately \$39 million and \$10 million, respectively. We have recorded valuation allowances on certain foreign net operating loss carryforwards. As of December 31, 2018 and 2017, deferred income tax assets related to the MAT were approximately \$228 million and \$278 million, respectively. The calculation of the MAT includes all profits realized by our Indian subsidiaries and any MAT paid is creditable against future corporate income tax, subject to certain limitations. Our existing MAT assets expire between March 2024 and March 2032 and we expect to fully utilize them within the applicable expiration periods, which was extended to 15 years from 10 years by the 2017 Union Budget of India.

Our Indian subsidiaries, collectively referred to as Cognizant India, are primarily export-oriented and are eligible for certain income tax holiday benefits granted by the government of India for export activities conducted within Special Economic Zones ("SEZs") for periods of up to 15 years. Our SEZ income tax holiday benefits are currently scheduled to expire in whole or in part through the year 2026 and may be extended on a limited basis for an additional five years per unit if certain reinvestment criteria are met. Our Indian profits ineligible for SEZ benefits are subject to corporate income tax at the rate of 34.9%. In addition, all

Indian profits, including those generated within SEZs, are subject to the MAT, at the rate of 21.6%. For the years ended December 31, 2018, 2017 and 2016, the effect of the income tax holidays granted by the Indian government was to reduce the overall income tax provision and increase net income by approximately \$146 million, \$217 million and \$203 million, respectively, and increase diluted EPS by \$0.25, \$0.36 and \$0.33, respectively.

We conduct business globally and file income tax returns in the United States, including federal and state, as well as various foreign jurisdictions. Tax years that remain subject to examination by the Internal Revenue Service are 2012 and onward, and years that remain subject to examination by state authorities vary by state. Years under examination by foreign tax authorities are 2001 and onward. In addition, transactions between our affiliated entities are arranged in accordance with applicable transfer pricing laws, regulations and relevant guidelines. As a result, and due to the interpretive nature of certain aspects of these laws and guidelines, we have pending before the taxing authorities in some of our most significant jurisdictions applications for Advance Pricing Agreements.

We record incremental tax expense, based upon the more-likely-than-not standard, for any uncertain tax positions. In addition, when applicable, we adjust the previously recorded income tax expense to reflect examination results when the position is effectively settled or otherwise resolved. Our ongoing evaluations of the more-likely-than-not outcomes of the examinations and related tax positions require judgment and can result in adjustments that increase or decrease our effective income tax rate, as well as impact our operating results. The specific timing of when the resolution of each tax position will be reached is uncertain.

Changes in unrecognized income tax benefits were as follows for the years ended December 31:

	2018	2017	2016
	(in millions)		
Balance, beginning of year	\$ 97	\$ 151	\$ 139
Additions based on tax positions related to the current year	8	17	11
Additions for tax positions of prior years	19	2	19
Additions for tax positions of acquired subsidiaries	6	—	—
Reductions for tax positions due to lapse of statutes of limitations	(12)	(41)	(15)
Reductions for tax positions of prior years	—	(32)	(1)
Settlements	—	—	—
Foreign currency exchange movement	(1)	—	(2)
Balance, end of year	<u>\$ 117</u>	<u>\$ 97</u>	<u>\$ 151</u>

At December 31, 2018, the unrecognized income tax benefits would affect our effective income tax rate, if recognized. While the Company believes uncertain tax positions may be settled or resolved within the next twelve months, it is difficult to estimate the income tax impact of these potential resolutions at this time. We recognize accrued interest and any penalties associated with uncertain tax positions as part of our provision for income taxes. The total amount of accrued interest and penalties at December 31, 2018 and 2017 was approximately \$11 million and \$8 million, respectively, and relates to U.S. and foreign tax matters. The amounts of interest and penalties recorded in the provision for income taxes in 2018, 2017 and 2016 were immaterial.

Note 12 — Derivative Financial Instruments

In the normal course of business, we use foreign exchange forward contracts to manage foreign currency exchange rate risk. The estimated fair value of the foreign exchange forward contracts considers the following items: discount rate, timing and amount of cash flow and counterparty credit risk. Derivatives may give rise to credit risks from the possible non-performance by counterparties. Credit risk is limited to the fair value of those contracts that are favorable to us. We have limited our credit risk by entering into derivative transactions only with highly-rated financial institutions, limiting the amount of credit exposure with any one financial institution and conducting ongoing evaluation of the creditworthiness of the financial institutions with which we do business. In addition, all the assets and liabilities related to our foreign exchange forward contracts set forth in the below table are subject to master netting arrangements, such as the International Swaps and Derivatives Association ("ISDA"), with each individual counterparty. These master netting arrangements generally provide for net settlement of all outstanding contracts with the counterparty in the case of an event of default or a termination event. We have presented all the assets and liabilities related to our foreign exchange forward contracts on a gross basis, with no offsets, in our consolidated statements of financial position. There is no financial collateral (including cash collateral) posted or received by us related to our foreign exchange forward contracts.

The following table provides information on the location and fair values of derivative financial instruments included in our consolidated statements of financial position as of December 31:

Designation of Derivatives	Location on Statement of Financial Position	2018		2017	
		Assets	Liabilities	Assets	Liabilities
(in millions)					
Foreign exchange forward contracts - Designated as cash flow hedging instruments	Other current assets	\$ 11	\$ —	\$ 134	\$ —
	Other noncurrent assets	15	—	20	—
	Accrued expenses and other current liabilities	—	21	—	—
	Other noncurrent liabilities	—	9	—	—
	Total	26	30	154	—
Foreign exchange forward contracts - Not designated as cash flow hedging instruments	Other current assets	1	—	—	—
	Accrued expenses and other current liabilities	—	4	—	5
	Total	1	4	—	5
Total		\$ 27	\$ 34	\$ 154	\$ 5

Cash Flow Hedges

We have entered into a series of foreign exchange forward contracts that are designated as cash flow hedges of Indian rupee denominated payments in India. These contracts are intended to partially offset the impact of movement of exchange rates on future operating costs and are scheduled to mature each month during 2019 and 2020. Under these contracts, we purchase Indian rupees and sell U.S. dollars. The changes in fair value of these contracts are initially reported in the caption "Accumulated other comprehensive income (loss)" in our consolidated statements of financial position and are subsequently reclassified to earnings in the same period the forecasted Indian rupee denominated payments are recorded in earnings. As of December 31, 2018, we estimate that \$9 million, net of tax, of the net losses related to derivatives designated as cash flow hedges reported in the caption "Accumulated other comprehensive income (loss)" in our consolidated statements of financial position is expected to be reclassified into earnings within the next 12 months.

The notional value of our outstanding contracts by year of maturity and the net unrealized losses included in the caption "Accumulated other comprehensive income (loss)" in our consolidated statements of financial position, for such contracts were as follows as of December 31:

	2018		2017	
	(in millions)			
2018	\$ —	\$ 1,185		
2019	1,388	720		
2020	780	—		
Total notional value of contracts outstanding	\$ 2,168	\$ 1,905		
Net unrealized (losses) gains included in accumulated other comprehensive income (loss), net of taxes	\$ (3)	\$ 115		

Upon settlement or maturity of the cash flow hedge contracts, we record the related gains or losses, based on our designation at the commencement of the contract, with the related hedged Indian rupee denominated expense reported within the caption "Cost of revenues" and "Selling, general and administrative expenses" in our consolidated statements of operations. Hedge ineffectiveness was immaterial for all periods presented.

The following table provides information on the location and amounts of pre-tax gains and losses on our cash flow hedges for the year ended December 31:

	Change in Derivative Gains/Losses Recognized in Accumulated Other Comprehensive Income (Loss) (effective portion)		Location of Net Derivative Gains Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (effective portion)	Net Gains Reclassified from Accumulated Other Comprehensive Income (Loss) into Income (effective portion)	
	2018	2017		2018	2017
	(in millions)				
Foreign exchange forward contracts - Designated as cash flow hedging instruments	\$ (87)	\$ 232	Cost of revenues	\$ 61	\$ 109
			Selling, general and administrative expenses	10	20
			Total	\$ 71	\$ 129

The activity related to the change in net unrealized gains and losses on our cash flow hedges included in "Accumulated other comprehensive income (loss)" in our consolidated statements of stockholders equity is presented in [Note 14](#).

Other Derivatives

We use foreign exchange forward contracts to provide an economic hedge against balance sheet exposures to certain monetary assets and liabilities denominated in currencies, other than the functional currency of our foreign subsidiaries, primarily the British pound, Indian rupee and Euro. We entered into a series of foreign exchange forward contracts that are scheduled to mature in 2019. Realized gains or losses and changes in the estimated fair value of these derivative financial instruments are recorded in the caption "Foreign currency exchange gains (losses), net" in our consolidated statements of operations.

Additional information related to our outstanding foreign exchange forward contracts not designated as hedging instruments was as follows as of December 31:

	2018		2017	
	Notional	Market Value	Notional	Market Value
	(in millions)			
Contracts outstanding	\$ 507	\$ (3)	\$ 255	\$ (5)

The following table provides information on the location and amounts of realized and unrealized pre-tax gains and losses on our other derivative financial instruments for the year ended December 31:

	Location of Net Gains (Losses) on Derivative Instruments	Amount of Net Gains (Losses) on Derivative Instruments	
		2018	2017
		(in millions)	
Foreign exchange forward contracts - Not designated as hedging instruments	Foreign currency exchange gains (losses), net	\$ 31	\$ (23)

The related cash flow impacts of all of our derivative activities are reflected as cash flows from operating activities.

Note 13 — Fair Value Measurements

We measure our cash equivalents, investments and foreign exchange forward contracts at fair value. The authoritative guidance defines fair value as the exit price, or the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants as of the measurement date. The authoritative guidance also establishes a fair value hierarchy that is intended to increase consistency and comparability in fair value measurements and related disclosures. The fair value hierarchy is based on inputs to valuation techniques that are used to measure fair value that are either observable or unobservable. Observable inputs reflect assumptions market participants would use in pricing an asset or liability based on market data obtained from independent sources while unobservable inputs reflect a reporting entity's pricing based upon their own market assumptions.

The fair value hierarchy consists of the following three levels:

- Level 1 – Inputs are quoted prices in active markets for identical assets or liabilities.
- Level 2 – Inputs are quoted prices for similar assets or liabilities in an active market, quoted prices for identical or similar assets or liabilities in markets that are not active, inputs other than quoted prices that are observable and market-corroborated inputs which are derived principally from or corroborated by observable market data.
- Level 3 – Inputs are derived from valuation techniques in which one or more significant inputs or value drivers are unobservable.

The following table summarizes our financial assets and (liabilities) measured at fair value on a recurring basis as of December 31, 2018:

	Level 1	Level 2	Level 3	Total
	(in millions)			
Cash equivalents:				
Money market funds	\$ 103	\$ —	\$ —	\$ 103
Bank deposits	—	32	—	32
Certificates of deposit and commercial paper	—	68	—	68
Total cash equivalents	103	100	—	203
Short-term investments:				
Time deposits ⁽¹⁾	—	500	—	500
Available-for-sale investment securities:				
U.S. Treasury and agency debt securities	570	55	—	625
Corporate and other debt securities	—	416	—	416
Certificates of deposit and commercial paper	—	296	—	296
Asset-backed securities	—	334	—	334
Municipal debt securities	—	89	—	89
Total available-for-sale investment securities	570	1,190	—	1,760
Held-to-maturity investment securities:				
Corporate and other debt securities	—	546	—	546
Commercial paper	—	518	—	518
Total short-term held-to-maturity investment securities	—	1,064	—	1,064
Total short-term investments ⁽²⁾	570	2,754	—	3,324
Long-term investments:				
Held-to-maturity investment securities:				
Corporate and other debt securities	—	6	—	6
Total long-term held-to-maturity investment securities	—	6	—	6
Total long-term investments ⁽³⁾	—	6	—	6
Derivative financial instruments - foreign exchange forward contracts:				
Other current assets	—	12	—	12
Accrued expenses and other current liabilities	—	(25)	—	(25)
Other noncurrent assets	—	15	—	15
Other noncurrent liabilities	—	(9)	—	(9)
Total	\$ 673	\$ 2,853	\$ —	\$ 3,526

(1) Includes \$423 million in restricted time deposits. See [Note 11](#).

(2) Excludes an equity security invested in a mutual fund valued at \$25 million based on the NAV of the fund.

(3) Excludes equity and cost method investments of \$74 million at December 31, 2018.

The following table summarizes our financial assets and (liabilities) measured at fair value on a recurring basis as of December 31, 2017:

	Level 1	Level 2	Level 3	Total
	(in millions)			
Cash equivalents:				
Money market funds	\$ 334	\$ —	\$ —	\$ 334
Bank deposits	—	80	—	80
Commercial paper	—	386	—	386
Total cash equivalents	334	466	—	800
Short-term investments:				
Time deposits	—	389	—	389
Available-for-sale investment securities:				
U.S. Treasury and agency debt securities	585	76	—	661
Corporate and other debt securities	—	437	—	437
Certificates of deposit and commercial paper	—	450	—	450
Asset-backed securities	—	295	—	295
Municipal debt securities	—	129	—	129
Total available-for-sale investment securities	585	1,387	—	1,972
Held-to-maturity investment securities:				
Corporate and other debt securities	—	345	—	345
Commercial Paper	—	397	—	397
Total short-term held-to-maturity investment securities	—	742	—	742
Total short-term investments ⁽¹⁾	585	2,518	—	3,103
Long-term investments:				
Held-to-maturity investment securities:				
Corporate and other debt securities	—	160	—	160
Total long-term held-to-maturity investment securities	—	160	—	160
Total long-term investments ⁽²⁾	—	160	—	160
Derivative financial instruments - foreign exchange forward contracts:				
Other current assets	—	134	—	134
Accrued expenses and other current liabilities	—	(5)	—	(5)
Other noncurrent assets	—	20	—	20
Total	\$ 919	\$ 3,293	\$ —	\$ 4,212

(1) Excludes an equity security invested in a mutual fund valued at \$25 million based on the NAV of the fund.

(2) Excludes equity and cost method investments of \$74 million at December 31, 2017.

We measure the fair value of money market funds and U.S. Treasury securities based on quoted prices in active markets for identical assets and therefore classify these assets as Level 1. The fair value of commercial paper, certificates of deposit, U.S. government agency securities, municipal debt securities, debt securities issued by supranational institutions, U.S. and international corporate bonds and foreign government debt securities is measured based on relevant trade data, dealer quotes, or model-driven valuations using significant inputs derived from or corroborated by observable market data, such as yield curves and credit spreads. We measure the fair value of our asset-backed securities using model-driven valuations based on significant inputs derived from or corroborated by observable market data such as dealer quotes, available trade information, spread data, current market assumptions on prepayment speeds and defaults and historical data on deal collateral performance. The carrying value of the time deposits approximated fair value as of December 31, 2018 and 2017.

We estimate the fair value of each foreign exchange forward contract by using a present value of expected cash flows model. This model calculates the difference between the current market forward price and the contracted forward price for each foreign

exchange contract and applies the difference in the rates to each outstanding contract. The market forward rates include a discount and credit risk factor. The amounts are aggregated by type of contract and maturity.

During the years ended December 31, 2018, 2017 and 2016, there were no transfers among Level 1, Level 2 or Level 3 financial assets and liabilities.

Note 14 — Stockholders' Equity

Stock Repurchase Program

In November 2018, the Board of Directors approved an amendment to the then in effect stock repurchase program. Under this amended stock repurchase program, we are authorized to repurchase \$5.5 billion of our Class A common stock, excluding fees and expenses, through December 31, 2020. These share repurchases can be made through open market purchases, including under a trading plan adopted pursuant to Rule 10b5-1 of the Exchange Act, or in private transactions, including through ASR agreements entered into with financial institutions, in accordance with applicable federal securities laws. The timing of repurchases and the exact number of shares to be purchased are determined by management, in its discretion, or pursuant to a Rule 10b5-1 trading plan, and will depend upon market conditions and other factors. As of December 31, 2018, the remaining available balance under the Board of Directors' authorized stock repurchase program was \$2.5 billion.

The Company's share repurchase activity was as follows for the years ended December 31:

	2018		2017		2016	
	Shares	Amount	Shares	Amount	Shares	Amount
	(in millions)					
Open-market share repurchases	4	\$ 275	—	\$ —	8	\$ 440
ASRs	12	900	28	1,800	—	—
Share repurchases in connection with stock-based compensation plans	1	86	1	89	1	72
	<u>17</u>	<u>\$ 1,261</u>	<u>29</u>	<u>\$ 1,889</u>	<u>9</u>	<u>\$ 512</u>

In 2018 and 2017, we entered into several ASR agreements, referred to collectively as the 2018 and 2017 ASRs, with certain financial institutions under our stock repurchase program. Under the terms of the 2018 and 2017 ASRs and in exchange for up-front payments of \$900 million and \$1,800 million, respectively, the financial institutions delivered 12 million and 28 million shares, respectively. The final number of shares repurchased was based on the final volume-weighted average price of the Company's Class A common stock during the purchase period less the negotiated discount. The 2018 and 2017 ASRs met all of the applicable criteria for equity classification, and therefore were not accounted for as derivative instruments. There are no outstanding ASR agreements as of December 31, 2018.

Additionally, stock repurchases were made in connection with our stock-based compensation plans, whereby Company shares were tendered by employees for payment of applicable statutory tax withholdings. In 2017, we also repurchased a limited number of shares from employees at the repurchase date market price. Combined, such repurchases in 2018, 2017 and 2016 totaled approximately 1 million shares each, at an aggregate cost of \$86 million, \$89 million, and \$72 million, respectively.

Accumulated Other Comprehensive Income (Loss)

Changes in "Accumulated other comprehensive income (loss)" by component were as follows for the year ended December 31, 2018:

	2018		
	Before Tax Amount	Tax Effect	Net of Tax Amount
(in millions)			
Foreign currency translation adjustments:			
Beginning balance	\$ (38)	\$ —	\$ (38)
Change in foreign currency translation adjustments	(70)	5	(65)
Ending balance	<u>\$ (108)</u>	<u>\$ 5</u>	<u>\$ (103)</u>
Unrealized (losses) on available-for-sale investment securities:			
Beginning balance	\$ (11)	\$ 4	\$ (7)
Cumulative effect of change in accounting principle ⁽¹⁾	—	(1)	(1)
Net unrealized losses arising during the period	(5)	2	(3)
Reclassification of net losses to Other, net	4	(1)	3
Net change	(1)	—	(1)
Ending balance	<u>\$ (12)</u>	<u>\$ 4</u>	<u>\$ (8)</u>
Unrealized gains (losses) on cash flow hedges:			
Beginning balance	\$ 154	\$ (39)	\$ 115
Unrealized (losses) arising during the period	(87)	23	(64)
Reclassifications of net (gains) to:			
Cost of revenues	(61)	15	(46)
Selling, general and administrative expenses	(10)	2	(8)
Net change	(158)	40	(118)
Ending balance	<u>\$ (4)</u>	<u>\$ 1</u>	<u>\$ (3)</u>
Accumulated other comprehensive income (loss):			
Beginning balance	\$ 105	\$ (35)	\$ 70
Other comprehensive income (loss)	(229)	45	(184)
Ending balance	<u>\$ (124)</u>	<u>\$ 10</u>	<u>\$ (114)</u>

(1) Reflects the adoption of accounting standards as described in [Note 1](#).

Changes in "Accumulated other comprehensive income (loss)" by component were as follows for the years ended December 31, 2017 and 2016:

	2017			2016		
	Before Tax Amount	Tax Effect	Net of Tax Amount	Before Tax Amount	Tax Effect	Net of Tax Amount
(in millions)						
Foreign currency translation adjustments:						
Beginning balance	\$ (149)	\$ —	\$ (149)	\$ (90)	\$ —	\$ (90)
Change in foreign currency translation adjustments	111	—	111	(59)	—	(59)
Ending balance	<u>\$ (38)</u>	<u>\$ —</u>	<u>\$ (38)</u>	<u>\$ (149)</u>	<u>\$ —</u>	<u>\$ (149)</u>
Unrealized (losses) on available-for-sale investment securities:						
Beginning balance	\$ (6)	\$ 2	\$ (4)	\$ (7)	\$ 3	\$ (4)
Net unrealized (losses) gains arising during the period	(7)	3	(4)	5	(2)	3
Reclassification of net losses (gains) to Other, net	2	(1)	1	(4)	1	(3)
Net change	<u>(5)</u>	<u>2</u>	<u>(3)</u>	<u>1</u>	<u>(1)</u>	<u>—</u>
Ending balance	<u>\$ (11)</u>	<u>\$ 4</u>	<u>\$ (7)</u>	<u>\$ (6)</u>	<u>\$ 2</u>	<u>\$ (4)</u>
Unrealized gains (losses) on cash flow hedges:						
Beginning balance	\$ 51	\$ (12)	\$ 39	\$ (15)	\$ 3	\$ (12)
Unrealized gains arising during the period	232	(57)	175	83	(19)	64
Reclassifications of net (gains) losses to:						
Cost of revenues	(109)	26	(83)	(14)	3	(11)
Selling, general and administrative expenses	(20)	4	(16)	(3)	1	(2)
Net change	<u>103</u>	<u>(27)</u>	<u>76</u>	<u>66</u>	<u>(15)</u>	<u>51</u>
Ending balance	<u>\$ 154</u>	<u>\$ (39)</u>	<u>\$ 115</u>	<u>\$ 51</u>	<u>\$ (12)</u>	<u>\$ 39</u>
Accumulated other comprehensive income (loss):						
Beginning balance	\$ (104)	\$ (10)	\$ (114)	\$ (112)	\$ 6	\$ (106)
Other comprehensive income (loss)	209	(25)	184	8	(16)	(8)
Ending balance	<u>\$ 105</u>	<u>\$ (35)</u>	<u>\$ 70</u>	<u>\$ (104)</u>	<u>\$ (10)</u>	<u>\$ (114)</u>

Note 15 — Commitments and Contingencies

We lease office space and equipment under operating leases, which expire at various dates through the year 2031. Certain leases contain renewal provisions and generally require us to pay utilities, insurance, taxes and other operating expenses. Future minimum payments on our operating leases as of December 31, 2018 were as follows:

	Operating lease obligation
	(in millions)
2019	\$ 226
2020	197
2021	157
2022	121
2023	90
Thereafter	197
Total minimum lease payments	<u>\$ 988</u>

Rental expense totaled \$282 million, \$265 million and \$227 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Future minimum payments on our capital leases as of December 31, 2018 were as follows:

	Capital lease obligation
	(in millions)
2019	\$ 17
2020	13
2021	10
2022	8
2023	4
Thereafter	19
Total minimum lease payments	71
Interest	(10)
Present value of minimum lease payments	<u>\$ 61</u>

We are involved in various claims and legal actions arising in the ordinary course of business. We accrue a liability when a loss is considered probable and the amount can be reasonably estimated. When a material loss contingency is reasonably possible but not probable, we do not record a liability, but instead disclose the nature and the amount of the claim, and an estimate of the loss or range of loss, if such an estimate can be made. Legal fees are expensed as incurred. In the opinion of management, the outcome of any existing claims and legal or regulatory proceedings (other than the specific matters described below, if decided adversely) is not expected to have a material adverse effect on our business, financial condition, results of operations and cash flows.

In February 2019, we completed our internal investigation focused on whether certain payments relating to Company-owned facilities in India were made improperly and in violation of the FCPA and other applicable laws. During the year ended December 31, 2016, we recorded out-of-period corrections related to \$4 million of potentially improper payments between 2009 and 2016 that had been previously capitalized when they should have been expensed. These out-of-period corrections were not material to any previously issued financial statements. There were no adjustments recorded during 2018 and 2017 related to the amounts then under investigation.

On February 15, 2019, we announced a resolution of the previously disclosed investigations by the DOJ and SEC into the matters that were the subject of our internal investigation. The resolution required the Company to pay approximately \$28 million to the DOJ and SEC, an amount consistent with the FCPA Accrual.

On October 5, 2016, October 27, 2016, and November 18, 2016, three putative securities class action complaints were filed in the United States District Court for the District of New Jersey, naming us and certain of our current and former officers as defendants. In an order dated February 3, 2017, the United States District Court for the District of New Jersey consolidated the three putative securities class actions into a single action and appointed lead plaintiffs and lead counsel. On April 7, 2017, the lead plaintiffs filed a consolidated amended complaint on behalf of a putative class of stockholders who purchased our common stock during the period between February 27, 2015 and September 29, 2016, naming us and certain of our current and former officers as defendants and alleging violations of the Exchange Act, based on allegedly false or misleading statements related to potential violations of the FCPA, our business, prospects and operations, and the effectiveness of our internal controls over financial reporting and our disclosure controls and procedures. The lead plaintiffs seek an award of compensatory damages, among other relief, and their reasonable costs and expenses, including attorneys' fees. Defendants filed a motion to dismiss the consolidated amended complaint on June 6, 2017, and the motion to dismiss was fully briefed as of September 5, 2017. On August 8, 2018, the Court issued an order which granted the motion to dismiss in part, including dismissal of all claims against current officers of the Company, and denied them in part. On September 7, 2018, we filed a motion in the United States District Court for the District of New Jersey to certify the August 8, 2018 order for immediate appeal to the United States Court of Appeals for the Third Circuit pursuant to 28 U.S.C. § 1292(b). On October 18, 2018, the District Court issued an order granting our motion, and staying the action pending the outcome of our petition to the Third Circuit. On October 29, 2018, we filed a petition for permission to appeal pursuant to 28 U.S.C. 1292(b) with the United States Court of Appeals for the Third Circuit. Plaintiffs filed their opposition to the petition on November 8, 2018. On November 13, 2018, we filed a motion for leave to file a reply in support of our petition, and a proposed reply. On November 21, 2018, plaintiffs filed an opposition to our motion for leave to file a reply. The parties are now awaiting a decision from the Third Circuit on the petition.

On October 31, 2016, November 15, 2016, and November 18, 2016, three putative shareholder derivative complaints were filed in New Jersey Superior Court, Bergen County, naming us, all of our then current directors and certain of our current and former officers as defendants. On January 24, 2017, the New Jersey Superior Court, Bergen County, consolidated the three putative shareholder derivative actions filed in that court into a single action and appointed lead plaintiff and lead counsel. The complaints assert claims for breach of fiduciary duty, corporate waste, unjust enrichment, abuse of control, mismanagement, and/or insider selling by defendants. On March 16, 2017, the parties filed a stipulation deferring all further proceedings pending a final, non-appealable ruling on the then anticipated motion to dismiss the consolidated putative securities class action. On April 26, 2017, in lieu of ordering the stipulation filed by the parties, the New Jersey Superior Court deferred further proceedings by dismissing the consolidated putative shareholder derivative litigation without prejudice but permitting the parties to file a motion to vacate the dismissal in the future. On February 22, 2017, a fourth putative shareholder derivative complaint asserting similar claims was filed in the United States District Court for the District of New Jersey, naming us and certain of our then current directors as defendants. On April 5, 2017, the United States District Court for the District of New Jersey entered an order staying all proceedings pending a final, non-appealable ruling on the then anticipated motion to dismiss the consolidated putative securities class action. On April 7, 2017, a fifth putative shareholder derivative complaint was filed in the United States District Court for the District of New Jersey, naming us, certain of our then current directors, and certain of our current and former officers as defendants. The complaint in that action asserts claims similar to those in the previously-filed putative shareholder derivative actions, but also adds a claim for violations of Section 10(b) of the Exchange Act against the individual defendants. On May 10, 2017, a sixth putative shareholder derivative complaint was filed in the United States District Court for the District of New Jersey, naming us, certain of our then current directors, and certain of our current and former officers as defendants. The complaint in that action asserts claims similar to those in the previously-filed putative shareholder derivative actions, but also adds a claim for violations of Section 14(a) of the Exchange Act against the individual defendants. In an order dated June 20, 2017, the United States District Court for the District of New Jersey consolidated the three putative shareholder derivative actions filed in that court into a single action, appointed lead plaintiff and lead counsel, and stayed all further proceedings pending a final, non-appealable ruling on the motions to dismiss the consolidated putative securities class action. On October 30, 2018, plaintiffs filed a consolidated verified derivative complaint in the consolidated District Court action. All of the putative shareholder derivative complaints allege among other things that certain of our public disclosures were false and misleading by failing to disclose that payments allegedly in violation of the FCPA had been made and by asserting that management had determined that our internal controls were effective. The plaintiffs seek awards of compensatory damages and restitution to the Company as a result of the alleged violations and their costs and attorneys' fees, experts' fees, and other litigation expenses, among other relief.

We are presently unable to predict the duration, scope or result of the consolidated putative securities class action, the putative shareholder derivative actions or any other lawsuits. As such, we are presently unable to develop a reasonable estimate of a possible loss or range of losses, if any, and thus have not recorded any accruals related to these matters. While the Company intends to defend the lawsuits vigorously, these lawsuits and any other related lawsuits are subject to inherent uncertainties, the actual cost of such litigation will depend upon many unknown factors and the outcome of the litigation is necessarily uncertain.

We have indemnification and expense advancement obligations pursuant to our Bylaws and indemnification agreements with respect to certain current and former members of senior management and the Company's directors. In connection with the

matters that were the subject of our internal investigation, the DOJ and SEC investigations and the related litigation, we have received and expect to continue to receive requests under such indemnification agreements and our Bylaws to provide funds for legal fees and other expenses. We have expensed such costs incurred through December 31, 2018.

We have maintained directors and officers insurance, from which a portion of the indemnification and expense advancement obligations and costs related to the putative securities class action complaints may be recoverable, and have recorded an insurance receivable of \$4 million as of December 31, 2018. We are unable to make a reliable estimate of the eventual cash flows by period related to the indemnification and expense advancement obligations described here.

See [Note 11](#) for information relating to the ITD Dispute.

Many of our engagements involve projects that are critical to the operations of our customers' business and provide benefits that are difficult to quantify. Any failure in a customer's systems or our failure to meet our contractual obligations to our customers, including any breach involving a customer's confidential information or sensitive data, or our obligations under applicable laws or regulations could result in a claim for substantial damages against us, regardless of our responsibility for such failure. Although we attempt to contractually limit our liability for damages arising from negligent acts, errors, mistakes, or omissions in rendering our services, there can be no assurance that the limitations of liability set forth in our contracts will be enforceable in all instances or will otherwise protect us from liability for damages. Although we have general liability insurance coverage, including coverage for errors or omissions, there can be no assurance that such coverage will cover all types of claims, continue to be available on reasonable terms or will be available in sufficient amounts to cover one or more large claims, or that the insurer will not disclaim coverage as to any future claim. The successful assertion of one or more large claims against us that exceed or are not covered by our insurance coverage or changes in our insurance policies, including premium increases or the imposition of large deductible or co-insurance requirements, could have a material adverse effect on our business, results of operations, financial condition and cash flows.

In the normal course of business and in conjunction with certain customer engagements, we have entered into contractual arrangements through which we may be obligated to indemnify customers or other parties with whom we conduct business with respect to certain matters. These arrangements can include provisions whereby we agree to hold the indemnified party and certain of their affiliated entities harmless with respect to third-party claims related to such matters as our breach of certain representations or covenants, our intellectual property infringement, our gross negligence or willful misconduct or certain other claims made against certain parties. Payments by us under any of these arrangements are generally conditioned on the customer making a claim and providing us with full control over the defense and settlement of such claim. It is not possible to determine the maximum potential liability under these indemnification agreements due to the unique facts and circumstances involved in each particular agreement. Historically, we have not made payments under these indemnification agreements and therefore they have not had any impact on our operating results, financial position, or cash flows. However, if events arise requiring us to make payment for indemnification claims under our indemnification obligations in contracts we have entered, such payments could have material impact on our business, results of operations, financial condition and cash flows.

Note 16 — Employee Benefits

We contribute to defined contribution plans in the United States and Europe, including 401(k) savings and supplemental retirement plans in the United States. Total expenses for our contributions to these plans were \$108 million, \$91 million and \$76 million for the years ended December 31, 2018, 2017 and 2016, respectively.

We maintain employee benefit plans that cover substantially all India-based employees. The employees' provident fund, pension and family pension plans are statutorily defined contribution retirement benefit plans. Under the plans, employees contribute up to 12.0% of their base compensation, which is matched by an equal contribution by the Company. For these plans, we recognized a contribution expense of \$88 million, \$86 million and \$79 million for the years ended December 31, 2018, 2017 and 2016, respectively.

We also maintain a gratuity plan in India that is a statutory post-employment benefit plan providing defined lump sum benefits. We make annual contributions to the employees' gratuity fund established with a government-owned insurance corporation to fund a portion of the estimated obligation. Accordingly, our liability for the gratuity plan reflected the undiscounted benefit obligation payable as of the balance sheet date, which was based upon the employees' salary and years of service. As of December 31, 2018 and 2017, the amount accrued under the gratuity plan was \$141 million and \$114 million, which is net of fund assets of \$136 million and \$138 million, respectively. Expense recognized by us was \$53 million, \$40 million and \$41 million for the years ended December 31, 2018, 2017 and 2016, respectively.

Note 17 — Stock-Based Compensation Plans

The Company's 2017 Incentive Award Plan (the "2017 Incentive Plan") and the 2004 Employee Stock Purchase Plan (the "Purchase Plan"), as amended in 2013, provide for the issuance of up to 48.8 million (plus any shares underlying outstanding awards that are forfeited under the Company's Amended and Restated 2009 Incentive Compensation Plan ("2009 Incentive Plan")) and 40.0 million shares, respectively, of Class A common stock to eligible employees. The 2017 Incentive Plan does not affect any awards outstanding under the 2009 Incentive Plan. As of December 31, 2018, we have 38.7 million and 11.8 million shares available for grant under the 2017 Incentive Plan and the Purchase Plan, respectively.

The allocation of total stock-based compensation expense between cost of revenues and selling, general and administrative expenses as well as the related income tax benefit were as follows for the three years ended December 31:

	<u>2018</u>	<u>2017</u>	<u>2016</u>
		(in millions)	
Cost of revenues	\$ 62	\$ 55	\$ 53
Selling, general and administrative expenses	205	166	164
Total stock-based compensation expense	<u>\$ 267</u>	<u>\$ 221</u>	<u>\$ 217</u>
Income tax benefit	<u>\$ 66</u>	<u>\$ 101</u>	<u>\$ 49</u>

As a result of the adoption of authoritative stock compensation guidance in 2017, we recognized net excess tax benefits upon exercise or vesting of stock-based compensation awards in our income tax provision in the amount of \$20 million or \$0.03 per share in 2018 and \$40 million or \$0.07 per share in 2017. In 2016 such excess tax benefits were recorded in additional paid in capital.

Restricted Stock Units and Performance Stock Units

Restricted stock units ("RSUs") vest proportionately in quarterly or annual installments over one to four years. Stock-based compensation expense relating to RSUs is recognized on a straight-line basis over the requisite service period. A summary of the activity for RSUs granted under our stock-based compensation plans as of December 31, 2018 and changes during the year then ended is presented below:

	Number of Units (in millions)	Weighted Average Grant Date Fair Value (in dollars)
Unvested at January 1, 2018	5.2	\$ 63.80
Granted	2.8	74.94
Vested	(2.5)	64.05
Forfeited	(0.5)	65.93
Unvested at December 31, 2018	<u>5.0</u>	<u>\$ 69.64</u>

As of December 31, 2018, \$288 million of total remaining unrecognized stock-based compensation cost related to RSUs is expected to be recognized over the weighted-average remaining requisite service period of 2 years.

The total vesting date fair value of vested RSUs was \$194 million, \$169 million and \$138 million for the years ended December 31, 2018, 2017 and 2016, respectively. The weighted-average grant date fair value of RSUs granted in 2018, 2017 and 2016 was \$74.94, \$67.56 and \$55.55, respectively.

We granted performance stock units ("PSUs") that vest over periods ranging from one to three years to employees, including our executive officers. The vesting of PSUs is contingent on both meeting certain financial performance targets and continued service. Stock-based compensation costs for PSUs that vest proportionally are recognized on a graded-vesting basis over the vesting period based on the most probable outcome of the performance conditions. If the minimum performance targets are not met, no compensation cost is recognized and any recognized compensation cost is reversed.

A summary of the activity for PSUs granted under our stock-based compensation plans as of December 31, 2018 and changes during the year then ended is presented below. The presentation reflects the number of PSUs at the maximum performance milestones.

	Number of Units (in millions)	Weighted Average Grant Date Fair Value (in dollars)
Unvested at January 1, 2018	2.7	\$ 59.15
Granted	1.8	81.98
Vested	(0.7)	55.87
Forfeited	(0.2)	69.86
Reduction due to the achievement of lower than maximum performance milestones	(0.3)	60.31
Unvested at December 31, 2018	<u>3.3</u>	<u>\$ 71.59</u>

As of December 31, 2018, \$67 million of total remaining unrecognized stock-based compensation cost related to PSUs is expected to be recognized over the weighted-average remaining requisite service period of 1 year.

The total vesting date fair value of vested PSUs was \$53 million, \$60 million and \$57 million for the years ended December 31, 2018, 2017 and 2016, respectively. The weighted-average grant date fair value of PSUs granted in 2018, 2017 and 2016 was \$81.98, \$60.77 and \$55.08, respectively.

All RSUs and PSUs have dividend equivalent rights, which entitle holders to the same dividend value per share as holders of common stock. Dividend equivalent rights are subject to the same vesting and other terms and conditions as the corresponding unvested RSUs and PSUs and are accumulated and paid when the underlying shares vest. The fair value of RSUs and PSUs is determined based on the number of stock units granted and the quoted price of our stock at date of grant.

Stock Options and Purchase Plan

Stock options granted to employees under our plans vest proportionally over four years, unless specified otherwise, and have an exercise price equal to the fair market value of the common stock on the date of grant. Grants to non-employee directors vest proportionally over two years. Stock-based compensation expense relating to stock options is recognized on a straight-line basis over the requisite service period. As of December 31, 2018, there were 0.2 million stock options outstanding and no remaining unrecognized stock-based compensation cost. The total intrinsic value of options exercised was \$29 million, \$78 million and \$74 million for the years ended December 31, 2018, 2017 and 2016, respectively.

The Purchase Plan provides for eligible employees to purchase shares of Class A common stock at a price of 90% of the lesser of: (a) the fair market value of a share of Class A common stock on the first date of the purchase period or (b) the fair market value of a share of Class A common stock on the last date of the purchase period. Stock-based compensation expense for the Purchase Plan is recognized over the vesting period of three months on a straight-line basis.

The fair values of the options granted under the Purchase Plan, were estimated at the date of grant during the years ended December 31, 2018, 2017, and 2016 based upon the following assumptions and were as follows:

	2018	2017	2016
Dividend yield	1.0%	1.0%	0.0%
Weighted average volatility factor	21.0%	24.3%	26.5%
Weighted average expected life (in years)	0.25	0.25	0.25
Weighted average risk-free interest rate	1.9%	0.9%	0.4%
Weighted average grant date fair value	\$ 10.87	\$ 9.23	\$ 8.74

During the year ended December 31, 2018, we issued 2.7 million shares of Class A common stock under the Purchase Plan with a total fair value of approximately \$29 million.

Note 18 — Related Party Transactions

Brackett B. Denniston, III was the Interim General Counsel and an executive officer of the Company from December 2016 until May 15, 2017, during which period Mr. Denniston was also a Senior Counsel at the law firm of Goodwin Procter LLP ("Goodwin"). During the years ended December 31, 2017 and December 31, 2016, Goodwin performed legal services for the Company for which it earned approximately \$4 million and \$2 million, respectively. For such periods, the provision of legal

services from Goodwin was reviewed and approved by our Audit Committee. During the year ended December 31, 2018, Goodwin was not a related party of the Company.

In 2018, we provided \$100 million of initial funding to the Cognizant U.S. Foundation, which is focused on science, technology, engineering and math education in the United States. The expense was reported in the caption "Selling, general and administrative expenses" in our consolidated statement of operations. Additionally, two of our executive officers served as directors of the Cognizant U.S. Foundation during 2018.

Note 19 — Segment Information

Our reportable segments are:

- Financial Services, which consists of our banking and insurance operating segments;
- Healthcare, which consists of our healthcare and life sciences operating segments;
- Products and Resources, which consists of our retail and consumer goods, manufacturing and logistics, travel and hospitality, and energy and utilities operating segments; and
- Communications, Media and Technology, which includes our communications and media operating segment and our technology operating segment.

Our sales managers, account executives, account managers and project teams are aligned in accordance with the specific industries they serve. Our chief operating decision maker evaluates the Company's performance and allocates resources based on segment revenues and operating profit. Segment operating profit is defined as income from operations before unallocated costs. Generally, operating expenses for each operating segment have similar characteristics and are subject to the same factors, pressures and challenges. However, the economic environment and its effects on industries served by our operating segments may affect revenues and operating expenses to differing degrees.

In 2018, we made changes to the internal measurement of segment operating profits for the purpose of evaluating segment performance and resource allocation. The primary reason for the changes was to charge to our business segments costs that are directly managed and controlled by them. Specifically, segment operating profit now includes the stock-based compensation expense of sales managers, account executives, account managers and project teams, which was previously included in "unallocated costs." In addition, we have changed the methodology of allocating costs to our business segments for the use of our global delivery centers and infrastructure from a fixed per employee charge to a variable per employee charge that differs depending on location and assets deployed. We have reported our 2018 segment operating profits using the new allocation methodology and have restated the 2017 results to conform to the new methodology. It is impracticable for us to restate our 2016 segment operating results as the detailed information required for the allocation of such costs to the segments is not reasonably available.

Expenses included in segment operating profit consist principally of direct selling and delivery costs (including stock-based compensation expense) as well as a per employee charge for use of our global delivery centers and infrastructure. Certain selling, general and administrative expenses, excess or shortfall of incentive compensation for delivery personnel as compared to target, costs related to our realignment program, a portion of depreciation and amortization and the impact of the settlements of our cash flow hedges are not allocated to individual segments in internal management reports used by the chief operating decision maker. Accordingly, such expenses are excluded from segment operating profit and are separately disclosed as "unallocated costs" and adjusted against our total income from operations. Additionally, management has determined that it is not practical to allocate identifiable assets by segment, since such assets are used interchangeably among the segments.

Revenues from external customers and segment operating profit, before unallocated costs, by reportable segment were as follows:

	<u>2018⁽¹⁾</u>	<u>2017</u>	<u>2016⁽²⁾</u>
	(in millions)		
Revenues:			
Financial Services	\$ 5,845	\$ 5,636	\$ 5,366
Healthcare	4,668	4,263	3,871
Products and Resources	3,415	3,040	2,660
Communications, Media and Technology	2,197	1,871	1,590
Total revenues	<u>\$ 16,125</u>	<u>\$ 14,810</u>	<u>\$ 13,487</u>
Segment Operating Profit:			
Financial Services	\$ 1,757	\$ 1,771	\$ 1,707
Healthcare	1,431	1,301	1,153
Products and Resources	1,043	923	851
Communications, Media and Technology	700	601	488
Total segment operating profit	<u>4,931</u>	<u>4,596</u>	<u>4,199</u>
Less: unallocated costs	2,130	2,115	1,910
Income from operations	<u>\$ 2,801</u>	<u>\$ 2,481</u>	<u>\$ 2,289</u>

- (1) Results for 2018 are presented under the New Revenue Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting policies. See [Note 3](#) for additional information.
- (2) As described above, in 2018 we made changes to the internal measurement of segment operating profits. While we have restated the 2017 results to conform to the new methodology, it is impracticable for us to restate our 2016 segment operating results as the detailed information required for the allocation of such costs to the segments is not reasonably available.

Geographic Area Information

Revenues and long-lived assets, by geographic area, were as follows:

	<u>2018</u>	<u>2017</u>	<u>2016</u>
	(in millions)		
Revenues:⁽¹⁾			
North America ⁽²⁾	\$ 12,293	\$ 11,450	\$ 10,546
United Kingdom	1,274	1,150	1,176
Rest of Europe	1,563	1,248	969
Europe - Total	2,837	2,398	2,145
Rest of World ⁽³⁾	995	962	796
Total	<u>\$ 16,125</u>	<u>\$ 14,810</u>	<u>\$ 13,487</u>
	<u>2018</u>	<u>2017</u>	<u>2016</u>
	(in millions)		
Long-lived Assets:⁽⁴⁾			
North America ⁽²⁾	\$ 436	\$ 360	\$ 279
Europe	105	63	52
Rest of World ⁽³⁾⁽⁵⁾	853	901	980
Total	<u>\$ 1,394</u>	<u>\$ 1,324</u>	<u>\$ 1,311</u>

- (1) Revenues are attributed to regions based upon customer location.
- (2) Substantially all relates to the United States.
- (3) Includes our operations in Asia Pacific, the Middle East and Latin America.
- (4) Long-lived assets include property and equipment, net of accumulated depreciation and amortization.
- (5) Substantially all of these long-lived assets relate to our operations in India.

Note 20 — Quarterly Financial Data (Unaudited)

Summarized quarterly results for the two years ended December 31, 2018 are as follows:

2018 ⁽¹⁾	Three Months Ended				Full Year
	March 31	June 30	September 30	December 31	
	(in millions, except per share data)				
Revenues	\$ 3,912	\$ 4,006	\$ 4,078	\$ 4,129	\$ 16,125
Cost of revenues (exclusive of depreciation and amortization expense shown separately below)	2,401	2,417	2,480	2,540	9,838
Selling, general and administrative expenses	711	805	734	776	3,026
Depreciation and amortization expense	107	114	119	120	460
Income from operations	693	670	745	693	2,801
Net income	520	456	477	648	2,101
Basic earnings per share	\$ 0.89	\$ 0.78	\$ 0.82	\$ 1.12	\$ 3.61
Diluted earnings per share	\$ 0.88	\$ 0.78	\$ 0.82	\$ 1.12	\$ 3.60

2017	Three Months Ended				Full Year
	March 31	June 30	September 30	December 31	
	(in millions, except per share data)				
Revenues	\$ 3,546	\$ 3,670	\$ 3,766	\$ 3,828	\$ 14,810
Cost of revenues (exclusive of depreciation and amortization expense shown separately below)	2,194	2,261	2,337	2,360	9,152
Selling, general and administrative expenses	686	709	674	700	2,769
Depreciation and amortization expense	96	94	107	111	408
Income from operations	570	606	648	657	2,481
Net income (loss) ⁽²⁾	557	470	495	(18)	1,504
Basic earnings (losses) per share ⁽³⁾	\$ 0.92	\$ 0.80	\$ 0.84	\$ (0.03)	\$ 2.54
Diluted earnings (losses) per share ⁽³⁾	\$ 0.92	\$ 0.80	\$ 0.84	\$ (0.03)	\$ 2.53

- (1) Results for 2018 are presented under the New Revenue Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historic accounting policies. See [Note 3](#) for additional information.
- (2) The net loss for the quarter ended December 31, 2017, includes the one-time provisional incremental income tax expense relating to the Tax Reform Act. See [Note 11](#).
- (3) The sum of the quarterly basic and diluted earnings (losses) per share for each of the four quarters may not equal the earnings (losses) per share for the year due to rounding.

Note 21 — Subsequent Events

Dividend

On February 4, 2019, our Board of Directors approved the Company's declaration of a \$0.20 per share dividend with a record date of February 21, 2019 and a payment date of February 28, 2019.

Cognizant Technology Solutions Corporation
Valuation and Qualifying Accounts
For the Years Ended December 31, 2018, 2017 and 2016
(in millions)

Description	Balance at Beginning of Period	Charged to Costs and Expenses	Charged to Other Accounts	Deductions /Other	Balance at End of Period
	(in millions)				
Trade accounts receivable allowance for doubtful accounts:					
2018	\$ 65	\$ 13	\$ —	\$ —	\$ 78
2017	\$ 48	\$ 15	\$ 3	\$ 1	\$ 65
2016	\$ 39	\$ 12	\$ —	\$ 3	\$ 48
Warranty accrual:					
2018	\$ 30	\$ 32	\$ —	\$ 30	\$ 32
2017	\$ 26	\$ 30	\$ —	\$ 26	\$ 30
2016	\$ 24	\$ 28	\$ —	\$ 26	\$ 26
Valuation allowance—deferred income tax assets:					
2018	\$ 10	\$ 1	\$ —	\$ —	\$ 11
2017	\$ 10	\$ —	\$ —	\$ —	\$ 10
2016	\$ 10	\$ —	\$ —	\$ —	\$ 10

CERTIFICATION

I, Francisco D'Souza, certify that:

1. I have reviewed this Annual Report on Form 10-K of Cognizant Technology Solutions Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 19, 2019

/s/ FRANCISCO D'SOUZA

Francisco D'Souza
Chief Executive Officer
(Principal Executive Officer)

CERTIFICATION

I, Karen McLoughlin, certify that:

1. I have reviewed this Annual Report on Form 10-K of Cognizant Technology Solutions Corporation;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Dated: February 19, 2019

/s/ KAREN MCLOUGHLIN

Karen McLoughlin
Chief Financial Officer
(Principal Financial Officer)

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002***

In connection with the Annual Report on Form 10-K of Cognizant Technology Solutions Corporation (the “Company”) for the period ended December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Francisco D’Souza, Chief Executive Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 19, 2019

/s/ FRANCISCO D’SOUZA

Francisco D’Souza
Chief Executive Officer
(Principal Executive Officer)

* A signed original of this written statement required by Section 906 has been provided to Cognizant Technology Solutions Corporation and will be retained by Cognizant Technology Solutions Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

**CERTIFICATION PURSUANT TO 18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002***

In connection with the Annual Report on Form 10-K of Cognizant Technology Solutions Corporation (the “Company”) for the period ended December 31, 2018 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), the undersigned, Karen McLoughlin, Chief Financial Officer of the Company, hereby certifies, pursuant to 18 U.S.C. Section 1350, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Dated: February 19, 2019

/s/ KAREN MCLOUGHLIN

Karen McLoughlin
Chief Financial Officer
(Principal Financial Officer)

* A signed original of this written statement required by Section 906 has been provided to Cognizant Technology Solutions Corporation and will be retained by Cognizant Technology Solutions Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

Corporate information

Directors

Michael Patsalos-Fox ^(CC) ^(FC) ^(GC)

Chairman of the Board
Cognizant

Former Chairman, the Americas
McKinsey & Company

Francisco D'Souza ^(FC)

Executive Vice Chairman
Cognizant

Former Chief Executive Officer
Cognizant

Zein Abdalla ^(AC) ^(GC)

Former President
PepsiCo

Maureen Breakiron-Evans ^(AC) ^(GC)

Former Chief Financial Officer
Towers Perrin

Jonathan Chadwick ^(AC) ^(FC)

Former Chief Financial & Operating Officer
VMware

John M. Dineen ^(FC) ^(GC)

Former President & Chief Executive Officer
GE Healthcare

John N. Fox, Jr. ^(CC) ^(GC)

Former Vice Chairman
Deloitte & Touche

Brian Humphries

Chief Executive Officer
Cognizant

John E. Klein ^(AC) ^(CC) ^(GC)

Former Chairman of the Board
Cognizant

President & Chief Executive Officer
Polarex, Inc.

Leo S. Mackay, Jr. ^(AC) ^(CC)

Senior Vice President, Ethics & Enterprise Assurance
Lockheed Martin

Joseph M. Velli ^(AC) ^(GC)

Former Senior Executive Vice President
The Bank of New York

Board committees

^{AC} Audit

^{FC} Finance

^{CC} Management Development & Compensation

^{GC} Nominating, Governance & Public Affairs

* Denotes committee chairperson

Executive officers

Brian Humphries

Chief Executive Officer

Karen McLoughlin

Chief Financial Officer

Malcolm Frank

Executive Vice President,
Strategy and Marketing

Srinivasan Veeraghavachary

Executive Vice President,
Chief Operating Officer

Debashis Chatterjee

Executive Vice President
and President, Global Delivery

Ramakrishna Prasad Chintamaneni

Executive Vice President and President,
Global Industries and Consulting

Matthew Friedrich

Executive Vice President, General Counsel,
Chief Corporate Affairs Officer, and Secretary

Sumithra Gomatam

Executive Vice President
and President, Digital Operations

Gajen Kandiah

Executive Vice President
and President, Digital Business

Venkat Krishnaswamy

Executive Vice President and President,
Healthcare and Life Sciences

James Lennox

Executive Vice President,
Chief People Officer

Sean Middleton

Senior Vice President
and President, Cognizant Accelerator

Issam Allen Shaheen

Executive Vice President,
North American Digital Hubs

Dharmendra Kumar Sinha

Executive Vice President
and President, Global Client Services

Robert Telesmanic

Senior Vice President, Controller,
and Chief Accounting Officer

Santosh Thomas

Executive Vice President
and President, Global Growth Markets

Executive offices

Glenpointe Centre West
500 Frank W. Burr Blvd.
Teaneck, NJ 07666
Phone: 201.801.0233
www.cognizant.com

Form 10-K

A copy of the Company's Annual Report on Form 10-K is available without charge upon request by contacting Investor Relations at the address or phone number listed.

Common stock information

The Company's Class A Common Stock (CTSH) is listed on the Nasdaq Global Select Market.

Annual meeting

The Company's annual meeting of stockholders will be held on Tuesday, June 4, 2019 via live webcast at www.virtualshareholdermeeting.com/CTSH2019. Online check-in begins at 9:15 am; meeting begins at 9:30 am.

Independent registered public accounting firm

PricewaterhouseCoopers LLP
300 Madison Avenue
New York, NY 10017

Transfer agent

American Stock Transfer & Trust Company, LLC
620115th Avenue
Brooklyn, NY 11219

Investor relations

For more information, contact Katie Royce, Global Head of Investor Relations, at Katie.Royce@cognizant.com.

This Annual Report includes statements that may constitute forward-looking statements made pursuant to the safe harbor provisions of the Private Securities Litigation Reform Act of 1995, including, but not limited to, our expectations regarding opportunities in the marketplace, investment in and growth of our business, our shift to digital services and solutions, and our anticipated financial performance, the accuracy of which are necessarily subject to risks, uncertainties, and assumptions as to future events that may not prove to be accurate. These statements are neither promises nor guarantees, but are subject to a variety of risks and uncertainties, many of which are beyond the company's control, which could cause actual results to differ materially from those contemplated in these forward-looking statements. Existing and prospective investors are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof. Factors that could cause actual results to differ materially from those expressed or implied include general economic conditions, changes in the regulatory environment, including with respect to immigration and taxes, and the other factors discussed in the company's most recent Annual Report on Form 10-K, which is included in this Annual Report, and other filings with the SEC. The company undertakes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events, or otherwise, except as may be required under applicable securities law.

Cognizant[®]

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