

**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, 2019

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)

Glenpointe Centre West
500 Frank W. Burr Blvd.
Teaneck, New Jersey
(Address of Principal Executive Offices)

13-3728359
(I.R.S. Employer
Identification No.)

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>Trading Symbol(s)</u>	<u>Name of each exchange on which registered</u>
Class A Common Stock, \$0.01 par value per share	CTSH	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 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.

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 28, 2019, based on \$63.39 per share, the last reported sale price on the Nasdaq Global Select Market of the Nasdaq Stock Market LLC on that date, was \$34.9 billion.

The number of shares of Class A common stock, \$0.01 par value, of the registrant outstanding as of February 7, 2020 was 548,637,106 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 2020 Annual Meeting of Stockholders are incorporated by reference into Part III of this Report.



TABLE OF CONTENTS

Item	Page
<u>PART I</u>	<u>1</u>
1. <u>Business</u>	<u>1</u>
1A. <u>Risk Factors</u>	<u>8</u>
1B. <u>Unresolved Staff Comments</u>	<u>14</u>
2. <u>Properties</u>	<u>14</u>
3. <u>Legal Proceedings</u>	<u>14</u>
4. <u>Mine Safety Disclosures</u>	<u>14</u>
<u>PART II</u>	<u>15</u>
5. <u>Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	<u>15</u>
6. <u>Selected Financial Data</u>	<u>17</u>
7. <u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>18</u>
7A. <u>Quantitative and Qualitative Disclosures About Market Risk</u>	<u>37</u>
8. <u>Financial Statements and Supplementary Data</u>	<u>38</u>
9. <u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	<u>38</u>
9A. <u>Controls and Procedures</u>	<u>38</u>
9B. <u>Other Information</u>	<u>39</u>
<u>PART III</u>	<u>40</u>
10. <u>Directors, Executive Officers and Corporate Governance</u>	<u>40</u>
11. <u>Executive Compensation</u>	<u>40</u>
12. <u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	<u>40</u>
13. <u>Certain Relationships and Related Transactions, and Director Independence</u>	<u>40</u>
14. <u>Principal Accountant Fees and Services</u>	<u>40</u>
<u>PART IV</u>	<u>41</u>
15. <u>Exhibits, Financial Statements Schedules</u>	<u>41</u>
16. <u>Form 10-K Summary</u>	<u>43</u>
<u>SIGNATURES</u>	<u>44</u>
<u>EXHIBIT INDEX</u>	<u>41</u>
<u>INDEX TO CONSOLIDATED FINANCIAL STATEMENTS AND FINANCIAL STATEMENT SCHEDULE</u>	<u>F-1</u>

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 services include digital services and solutions, consulting, application development, systems integration, application testing, application maintenance, infrastructure services and business process services. Digital services have become an increasingly important part of our portfolio, aligning with our clients' focus on becoming data-enabled, customer-centric and differentiated businesses. We tailor our services and solutions to specific industries with an integrated global delivery model that employs client service and delivery teams based at client locations and dedicated global and regional delivery centers.

Certain terms used in this Annual Report on Form 10-K are defined in the [Glossary](#) included at the end of [Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations](#).

Business Segments

We go to market across our four industry-based business segments. Our clients seek to partner with service providers that have a deep understanding of their businesses, industry initiatives, customers, markets and cultures and the ability to create solutions tailored to meet their individual business needs. Across industries, our clients are confronted with the risk of being disrupted by nimble, digital-native competitors. They are therefore redirecting their focus and investment to digital and embracing DevOps and key technologies like IoT, analytics, AI, digital engineering, cloud and automation. We believe that our deep knowledge of the industries we serve and our clients’ businesses has been central to our revenue growth and high client satisfaction, and we continue to invest in those digital capabilities that help to enable our clients to become modern businesses. Our business segments are as follows:

Financial Services

- Banking
- Insurance

Healthcare

- Healthcare
- Life Sciences

Products and Resources

- Retail and Consumer Goods
- Manufacturing, Logistics, Energy and Utilities
- Travel and Hospitality

Communications, Media and Technology

- Communications and Media
- Technology

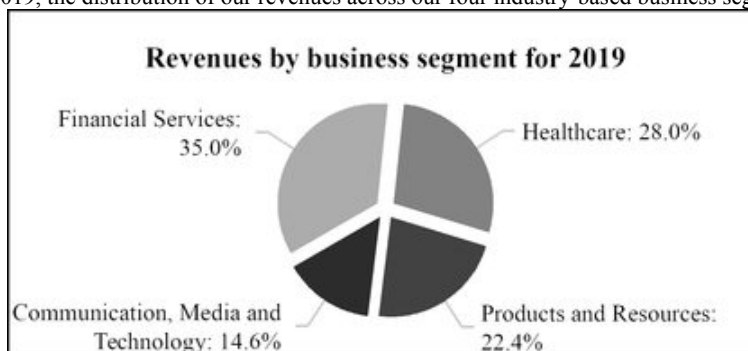
Our Financial Services segment includes banking, capital markets and insurance companies. Demand in this segment is driven by our clients’ need to be compliant with significant regulatory requirements and adaptable to regulatory change, and their adoption and integration of digital technologies, including customer experience enhancement, robotic process automation, analytics and AI in areas such as digital lending, fraud detection 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 and heightened focus on patient experience, as well as services that drive operational improvements in areas such as claims processing, enrollment, membership and billing. Demand is also created by the adoption and integration of digital technologies such as AI to shape personalized care plans and predictive data analytics to improve patient outcomes.

Our Products and Resources segment includes manufacturers, retailers and travel and hospitality companies, as well as companies providing logistics, energy and utility services. Demand in this segment is driven by our clients’ 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 chains and enhance overall customer experiences, and IoT to instrument functions for factories, real estate, fleets and products to increase access to insight generating data.

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

For the year ended December 31, 2019, the distribution of our revenues across our four industry-based business segments was as follows:



See [Note 2](#) to our consolidated financial statements for additional information related to disaggregation of revenues by client 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. Central to our strategy to align with our clients' need to modernize is our investment in four key areas of digital: IoT, AI, digital engineering and cloud. These four capabilities enable clients to put data at the core of their operations, improve the experiences they offer their customers, tap into new revenue streams, defend against technology-enabled competitors and reduce costs. In many cases, our clients' new digital systems are built upon the backbone of their existing legacy systems. Also, clients often look for efficiencies in the way they run their operations so they can fund investments in new digital technologies. 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 to make their operations more efficient and effective. We deliver all of our services and solutions across our four industry-based business segments to best address our clients' individual needs.

We seek to drive organic growth through investments in our digital capabilities across industries and geographies, 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 2019, we completed five such acquisitions:

- Mustache, a creative content agency based in the United States, that extends our capabilities in creating original and branded content for digital, broadcast and social mediums;
- Meritsoft, a financial software company based in Ireland, that complements our service offerings to capital markets institutions;
- Samlink, a developer of services and solutions for the financial sector based in Finland, that strengthens our banking capabilities and brings with it a strategic partnership with three Finnish financial institutions to transform and operate a shared core banking platform;
- Zenith, a life sciences company based in Ireland, that extends our service capabilities for connected biopharmaceutical and medical device manufacturers; and
- Contino, a technology consulting firm that extends our capabilities in enterprise DevOps and cloud transformation.

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



Digital Business

Our digital business practice helps clients build modern enterprises. Areas of focus within this practice area are:

- interactive, which is our global network of studios that help clients craft new experiences;
- application modernization, which updates legacy applications using modern technology stacks;
- AI and analytics, which drive business growth and efficiencies through a greater understanding of customers and operations;
- IoT, which unlocks greater productivity and new business models;
- digital advisory, which provides enterprise transformation expertise; and
- digital engineering, which designs, engineers, and delivers software that powers modern businesses.

Digital Operations

Our digital operations practice helps clients rethink their operating models by assessing their existing processes and recommending automation and change management, allowing clients to fundamentally transform how their processes run while also realizing cost savings benefits from these process improvements. Areas of focus within this practice area are:

- automation, analytics and consulting for business process outsourcing;
- platform-based operations; and
- core business process operations.

We have extensive knowledge of core front office, middle office and back office processes, including finance and accounting, research and analytics, procurement and data management, which we integrate with our industry and technology expertise to deliver targeted business process services and solutions.

Digital Systems & Technology

Our digital systems and technology practice helps clients reshape their technology models to simplify, modernize and secure the enabling systems that form the backbone of their business. With cloud becoming an essential catalyst for large-scale transformation efforts, cloud adoption is driving changes across the entire IT value chain. Areas of focus within this practice area include:

- enterprise application services;
- application development and maintenance;
- quality engineering and assurance;
- cloud;
- infrastructure; and
- security.

Consulting

Our consulting practice helps clients drive the changes that the evolving technology landscape requires of their organizations by providing global business, process, operations and technology consulting services. Our consulting professionals and domain experts from our industry-based business segments work closely with our practice areas to create modern frameworks, platforms and solutions that leverage a wide range of digital technologies across our clients' businesses to deliver higher levels of efficiency and new value for their customers.

Cognizant Accelerator

Cognizant Accelerator supports our business segments and four practice areas by developing innovative and practical offerings for clients' emerging needs through the application of new technologies.

Global Delivery Model

We utilize a global delivery model, with delivery centers worldwide to provide the full range of services we offer to our clients. Our delivery model includes employees deployed at client sites, local or in-country delivery centers, regional delivery centers and offshore delivery centers, as required to best serve our clients. As we scale our digital services and solutions, we are focused on hiring in the United States and other countries where we deliver services to our clients 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 many offices around the world. We are increasing our investment in sales and marketing professionals to help us expand existing accounts and acquire new ones, and amplify our brand's stature in the marketplace. These new investments are designed to support and enhance the sales and marketing group, which works with our client delivery team as the sales process moves closer to a client's selection of a services provider. The duration of the sales process may vary widely depending on the type and complexity of services.

Clients

The services we provide are distributed among a number of clients in each of our business segments. Revenues from our top clients as a percentage of total revenues were as follows:

	For the years ended December 31,		
	2019	2018	2017
Top five clients	7.9%	8.6%	8.9%
Top ten clients	14.6%	15.4%	14.9%

A loss of a significant client or a few significant clients in a particular segment could materially reduce revenues for that segment. The services we provide to our larger clients are often critical to their operations and a termination of our services would typically require an extended transition period with gradually declining revenues. Nevertheless, the volume of work performed for specific clients may vary significantly from year to year.

In the fourth quarter of 2019, we announced that we will exit certain content-related work that is not in line with our long-term strategic vision for the Company. We intend to exit this work in 2020 and this may negatively impact our relationship with the affected clients and the revenues from other services we provide to them. Refer to [Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations](#) for further information.

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

Intellectual Property

We provide value to our clients based, in part, on our proprietary innovations, methodologies, software, reusable knowledge capital and other 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 Cognizant brand, which is one of our most valuable assets. 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 and copyrights of varying 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, other than our Cognizant brand.

Cognizant® and other trademarks appearing in this report are registered trademarks or trademarks of Cognizant and its affiliates in the United States and other countries, or third parties, as applicable.

Employees

We had approximately 292,500 employees at the end of 2019, with approximately 46,400 in North America, approximately 21,200 in Europe and approximately 224,900 in various other locations throughout the rest of the world, including approximately 203,700 in India. We are not party to any significant collective bargaining agreements.

Information About Our Executive Officers

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>
Brian Humphries ⁽¹⁾	46	Chief Executive Officer	2019
Karen McLoughlin ⁽²⁾	55	Chief Financial Officer	2012
Robert Telesmanic ⁽³⁾	53	Senior Vice President, Contoller and Chief Accounting Officer	2017
Matthew Friedrich ⁽⁴⁾	53	Executive Vice President, General Counsel, Chief Corporate Affairs Officer and Secretary	2017
Becky Schmitt ⁽⁵⁾	46	Executive Vice President, Chief People Officer	2020
Dharmendra Kumar Sinha ⁽⁶⁾	57	Executive Vice President and President, North America	2019
Santosh Thomas ⁽⁷⁾	51	Executive Vice President and President, Global Growth Markets	2016
Malcolm Frank ⁽⁸⁾	53	Executive Vice President and President, Cognizant Digital Business	2019
Balu Ganesh Ayyar ⁽⁹⁾	58	Executive Vice President and President, Cognizant Digital Operations	2019
Greg Hyttenrauch ⁽¹⁰⁾	52	Executive Vice President and President, Cognizant Digital Systems & Technology	2019
Pradeep Shilige ⁽¹¹⁾	51	Executive Vice President and Head of Global Delivery	2019

(1) Brian Humphries has been our Chief Executive Officer and a member of the Board of Directors since April 2019. Prior to joining Cognizant, he served as Chief Executive Officer of Vodafone Business, a division of Vodafone Group, from 2017 until 2019. Mr. Humphries joined Vodafone from Dell Technologies where his positions from 2013 to 2017 included President and Chief Operating Officer of Dell's Infrastructure Solutions Group, President of Dell's Global Enterprise Solutions, and Vice President and General Manager, EMEA Enterprise Solutions. Before joining Dell, Mr. Humphries was with Hewlett-Packard where his roles from 2008 to 2013 included Senior Vice President, Emerging Markets, Senior Vice President, Strategy and Corporate Development, and Chief Financial Officer of HP Services. The early part of his career was spent with Compaq and Digital Equipment Corporation. He holds a bachelor's degree in Business Administration from the University of Ulster, Northern Ireland.

(2) 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 chair of 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.

(3) Robert Telesmanic has been our Senior Vice President, Contoller and Chief Accounting Officer since January 2017, a Senior Vice President since 2010 and our Corporate Contoller 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.
- (4) 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 served as Chief Corporate Counsel for Chevron Corporation from 2014 to 2017. Mr. Friedrich was a partner with the law firms of Freshfields Bruckhaus Deringer LLP and Boies Schiller & Flexner LLP prior to his role with Chevron. Mr. Friedrich began his legal career in 1995 as a federal prosecutor with the DOJ, 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 has served as a member of the Council on Foreign Relations since 2016, as a member of the Board of Directors of the U.S.-India Business Council since 2018 and as a member of the Board of Directors of the US Chamber of Commerce, Litigation Center since 2018. 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. Following law school, Mr. Friedrich clerked for U.S. District Judge Royal Furgeson in the Western District of Texas.
 - (5) Becky Schmitt has been our Executive Vice President, Chief People Officer since February 2020. Prior to joining Cognizant, Ms. Schmitt was the Chief People Officer of Sam's Club, a division of Walmart, Inc. from October 2018 through January 2020. Prior to that, she served as SVP, Chief People Officer, US eCommerce & Corporate Functions for Walmart from October 2016 through September 2018 and as VP, HR - Technology from February 2016 until October 2016. Prior to joining Walmart, Ms. Schmitt spent over 20 years with Accenture plc in various human resources roles, culminating in her role as HR Managing Director, North America Business from March 2014 through February 2016. Ms. Schmitt has served as a Board Member at Large for the Girl Scouts National Board since 2017. Ms. Schmitt has a Bachelor of Arts degree from University of Michigan, Ann Arbor.
 - (6) Dharmendra Kumar Sinha has been our Executive Vice President and President, North America since June 2019. Prior to that, he served as Executive Vice President and President, Global Client Services from December 2013 until June 2019. 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.
 - (7) 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 R.V. College of Engineering in Bangalore, India and a Postgraduate Diploma in Business Management from Xavier School of Management, India.
 - (8) Malcolm Frank has been our Executive Vice President and President, Cognizant Digital Business since May 2019. Prior to that, he served as Executive Vice President, Strategy and Marketing at Cognizant from 2012 to May 2019 and 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. He is also a member of the Board of Directors of the US-India Strategic Partnership Forum since May 2018. Mr. Frank has a Bachelor of Arts degree in Economics from Yale University.
 - (9) Balu Ganesh Ayyar has been our Executive Vice President and President, Cognizant Digital Operations since August 2019. Prior to joining Cognizant, Mr. Ayyar was the CEO of Mphasis, a global IT services company listed in India, from 2009 to 2017. Prior to Mphasis, Mr. Ayyar spent nearly two decades with Hewlett-Packard, holding a variety of leadership roles across multiple geographies.
 - (10) Greg Hyttenrauch has been our Executive Vice President and President, Cognizant Digital Systems & Technology since December 2019. Prior to joining Cognizant, Mr. Hyttenrauch served as Director, Global Cloud and Security Services for Vodafone from October 2015 to November 2019. Prior to Vodafone, Mr. Hyttenrauch held a variety of senior leadership positions at Capgemini from 2008 to 2015, including Deputy CEO, Global Infrastructure Services, and Global Sales Officer and CEO of the UK and Nordic Outsourcing Business Unit. Before joining Capgemini, Mr. Hyttenrauch held positions with CSC and EDS. He began his career with 13 years in the Canadian military, rising to the rank of captain. Mr. Hyttenrauch holds a bachelor's degree in Mechanical Engineering from the Royal Military College of Canada and an MBA in International Management from the University of Ottawa.

(11) Pradeep Shilige has been the Executive Vice President and Head of Global Delivery at Cognizant since July 2019. Prior to that, he served as Executive Vice President, Global Delivery and Digital Systems & Technology at Cognizant from 2015 through June 2019. Mr. Shilige has held multiple other leadership roles at Cognizant since joining the organization in 1996. Mr. Shilige is a member of the IT Services Council of NASSCOM, the premier industry association for the IT-BPM sector in India since 2017. He has a bachelor's degree in Computer Engineering from the National Institute of Technology in Karnataka, 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 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 clients and operations are concentrated.

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

Our business is particularly susceptible to economic and political conditions in the markets where our clients or operations are concentrated. Our revenues are highly dependent on clients located in the United States and Europe, and any adverse economic, political or legal uncertainties or adverse developments, including due to the uncertainty related to the potential economic and regulatory impacts of the United Kingdom's exit from the European Union, may cause clients in these geographies to reduce their spending and materially adversely impact our business. Many of our clients 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 client 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 client 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 reskill, retain, and motivate our workforce of hundreds of thousands of professionals with diverse skills and expertise in order to serve client 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 that, among other things, is effective in executing on our strategic goals and growing our digital business. 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, in particular with respect to digital, 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 and train new personnel and retain and reskill, as necessary, existing sales, 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 have incurred, and expect to continue to incur, substantial costs related to implementing our strategy to optimize such costs, and we may not realize the ultimate cost savings that we expect. 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 clients. Increases in wages and other costs 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 client contracts due to the fact that the substantial majority of our employees are in India while our contracts with clients are typically in the local currency of the country where our clients 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 or milestones required by certain of our client contracts may result in our client contracts being less profitable, potential liability for penalties or damages or reputational harm.

Many of our client 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. The use of new technologies in our offerings can expose us to additional risks if those technologies fail to work as predicted, or there are unintended consequences of new designs or uses, which could lead to cost overruns, project delays, financial penalties, or damage to our reputation. Clients 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 clients' 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 and significant technological advances that our service offerings must keep pace with 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 clients, or be able to provide services and solutions at lower costs or on terms more attractive to clients 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 clients 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 clients 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 clients. Examples of areas of significant change include digital-, cloud- and security-related offerings, which are continually evolving, as well as developments in areas such as AI, augmented reality, automation, blockchain, IoT, quantum computing and as-a-service solutions. 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 clients, are also critical to our ability to provide many of our services and solutions that address client 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 clients.

We face legal, reputational and financial risks if we fail to protect client 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 clients) and to communicate among our locations around the world and with our clients, 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 clients' sensitive data, which in turn could jeopardize projects that are critical to our operations or the operations of our clients' 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 client 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, client attrition, remediation expenses, disruption of our business, and claims brought by our clients 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 United Kingdom, 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. For example, the European Union's

General Data Protection Regulation has imposed stringent compliance obligations regarding the handling of personal data and has resulted in the issuance of significant financial penalties for noncompliance. In the United States, there have been proposals for federal privacy legislation and many new state privacy laws are on the horizon. Recently enacted legislation, such as the California Consumer Privacy Act, impose extensive privacy requirements on organizations governing personal information. Existing US sectoral laws such as the Health Insurance Portability and Accountability Act also impose extensive privacy and security requirements on organizations operating in the healthcare industry, which Cognizant serves. Additionally, in India, the Personal Data Protection Bill, 2018 was recently cleared for introduction in the current session of the Indian Parliament. If enacted in its current form it would impose stringent obligations on the handling of personal data, including certain localization requirements for sensitive 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 clients 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 and regional delivery centers, the offices of our clients 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, pandemics and public health emergencies, such as the coronavirus, 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 clients 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 or increased costs of obtaining such visas may affect our ability to compete for and provide services to clients 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, and potential enforcement actions and penalties that might cause us to lose access to such visas. 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 resulted in, and various proposed changes may result in, increased difficulty in obtaining timely visas that impact our ability to staff projects, including as a result of visa application rejections and delays in processing applications, and significantly increased costs for us in obtaining visas. 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. In addition, the administration has proposed for implementation in 2020 a policy change applicable to entities where more than 50% of the workers in the United States hold certain types of visas that, if implemented, would significantly increase the visa costs for such entities. In the EU, many countries 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 clients, 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 clients 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 clients. 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 clients 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 client data, particularly involving service providers in India. Current or prospective clients 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 clients operate.

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

We provide services to clients 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 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 clients and business, legal claims by clients 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. 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.

Various governmental bodies and many customers and businesses are increasingly focused on environmental and social issues, which has resulted and may in the future continue to result in the adoption of new laws and regulations and changing buying practices. If we fail to keep pace with these developments, our reputation and business could be adversely impacted.

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 clients, 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.

The following are several examples of changes in tax laws that may impact us:

- The Tax Reform Act was enacted in December 2017 and made a number of significant changes to the corporate tax regime in the United States. The U.S. Treasury department continues to issue proposed and final regulations which modify relevant aspects of the new tax regime.
- In December 2019, the Government of India enacted the India Tax Law effective retroactively to April 1, 2019 that enables Indian companies to elect to be taxed at a lower income tax rate of 25.17% as compared to the current rate

of 34.94%. Once a company elects into the lower income tax rate, a company may not benefit from any tax holidays associated with SEZs and certain other tax incentives, including MAT carryforwards, and may not reverse its election. As of December 31, 2019, we had deferred income tax assets related to the MAT carryforwards of approximately \$176 million. See [Note 11](#) to our consolidated financial statements. Our current intent is to elect into the new tax regime once our MAT carryforwards are fully or substantially utilized. Our intent is based on a number of current assumptions and financial projections, and if our intent were to change and we were to opt into the new tax regime at an earlier time, the write-off of any remaining MAT deferred tax assets may materially increase our provision for income taxes and effective income tax rate and decrease our earnings per share, while the loss of the benefit of the MAT carryforwards may increase our cash tax payments.

- The OECD has been working on a Base Erosion and Profit Shifting project and is expected to continue to issue guidelines and proposals that may change numerous long-standing tax principles. The changes recommended by the OECD have been or are being adopted by many of the countries in which we do business and could lead to disagreements among jurisdictions over the proper allocation of profits among them. The OECD has also undertaken a new project focused on “Addressing the Tax Challenges of the Digitalization of the Economy.” This project may impact multinational businesses by implementing a global model for minimum taxation. Similarly, the European Commission and various jurisdictions have introduced proposals to or passed laws that impose a separate tax on specified digital services. These recent and potential future tax law changes create uncertainty and may materially adversely impact our provision for income taxes.

Our worldwide effective income tax rate may increase as a result of these recent developments, changes in interpretations and assumptions made, additional guidance that may be issued and 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 ITD in which the ITD asserts that we owe additional taxes for two transactions by which 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 client 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 clients. For example, third parties could claim that we or our clients, 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, clients, 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. See [Note 11](#) to our consolidated financial statements. While we have no plans to do so, we may change our intent not to repatriate such earnings. Factors that may lead us to change our intent, include, but are not limited to, changes in cash estimates, capital requirements outside of India, discretionary transactions, changes to our shareholder capital return plan and legislative developments in India and other jurisdictions. For example, the Budget, as presented by the India Finance Minister on February 1, 2020, contains a number of proposed provisions related to tax, including a replacement of the dividend distribution tax, which is due from the dividend payer, with a tax payable by the shareholder receiving the dividend. This measure is proposed to be effective for the India financial year starting April 1, 2020. We are in the process of reviewing the various tax provisions outlined in the Budget, and will finalize our assessment once the Budget proposals are passed into law by the Parliament of India. A change in our intent not to repatriate Indian accumulated undistributed earnings would result in a material increase to our provision for income taxes and a decrease in our net income and earnings per share in the period such decision is made.

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 clients across all four of our business segments. We lease 0.1 million square feet of office space for our worldwide headquarters in Teaneck, New Jersey in the United States. In total, we have offices and operations in more than 79 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 27 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); Hyderabad (3 million square feet); and Bangalore (2 million square feet). Our India delivery centers represent approximately 80% 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 under the symbol “CTSH”. As of December 31, 2019, the approximate number of holders of record of our Class A common stock was 119 and the approximate number of beneficial holders of our Class A common stock was 302,700.

Cash Dividends

During 2019, we paid quarterly cash dividends of \$0.20 per share. In February 2020, our Board of Directors approved a 10% or \$0.02 increase to our quarterly cash dividends and the Company’s declaration of a \$0.22 per share dividend with a record date of February 18, 2020 and a payment date of February 28, 2020. We intend to continue to pay quarterly cash dividends during 2020 in accordance with our capital return plan. 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

Our stock repurchase program, as amended by our Board of Directors in February 2020, allows for the repurchase of up to \$7.5 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 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.

During the three months ended December 31, 2019, we repurchased \$150 million of our Class A common stock under our stock repurchase program. The following table sets out the stock repurchase activity under our stock repurchase program during the fourth quarter of 2019 and the approximate dollar value of shares that may yet be purchased under the program as of December 31, 2019.

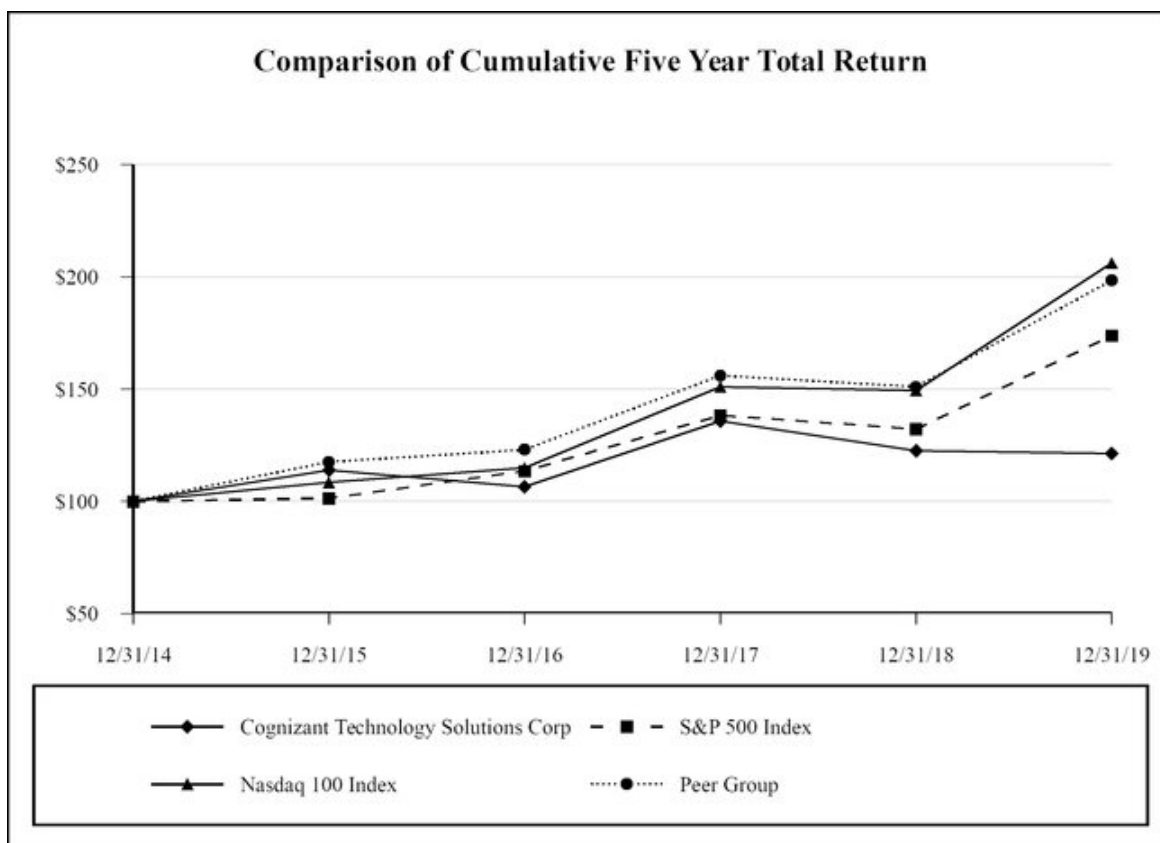
Month	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares that May Yet Be Purchased under the Plans or Programs (in millions)
October 1, 2019 - October 31, 2019				
Open market purchases	2,481,713	\$ 60.44	2,481,713	\$ 369
November 1, 2019 - November 30, 2019				
Open market purchases	—	—	—	369
December 1, 2019 - December 31, 2019				
Open market purchases	—	—	—	369
Total	<u>2,481,713</u>	<u>\$ 60.44</u>	<u>2,481,713</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, 2019, we purchased 192,182 shares at an aggregate cost of \$13 million in connection with employee tax withholding obligations.

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, 2014 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 12/31/14	12/31/15	12/31/16	12/31/17	12/31/18	12/31/19
Cognizant Technology Solutions Corp	\$ 100	\$ 113.98	\$ 106.40	\$ 135.74	\$ 122.62	\$ 121.31
S&P 500 Index	100	101.38	113.51	138.29	132.23	173.86
Nasdaq-100 Index	100	108.43	114.81	150.99	149.42	206.15
Peer Group	100	117.45	122.99	155.96	150.97	198.40

- (1) Graph assumes \$100 invested on December 31, 2014 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.

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, 2019 and 2018 and for each of the years ended December 31, 2019, 2018 and 2017 have been derived from the consolidated financial statements included elsewhere herein. Our selected consolidated financial data set forth below as of December 31, 2017, 2016 and 2015 and for each of the years ended December 31, 2016 and 2015 are derived from our consolidated financial statements not included elsewhere herein. Our selected consolidated financial information for 2019 and 2018 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.

	2019 ⁽¹⁾	2018 ⁽¹⁾	2017	2016	2015
	(in millions, except per share data)				
For the year ended December 31:					
Revenues	\$ 16,783	\$ 16,125	\$ 14,810	\$ 13,487	\$ 12,416
Income from operations	2,453	2,801	2,481	2,289	2,142
Net income ⁽²⁾	1,842	2,101	1,504	1,553	1,624
Basic earnings per share ⁽²⁾	\$ 3.30	\$ 3.61	\$ 2.54	\$ 2.56	\$ 2.67
Diluted earnings per share ⁽²⁾	\$ 3.29	\$ 3.60	\$ 2.53	\$ 2.55	\$ 2.65
Cash dividends declared per common share	\$ 0.80	\$ 0.80	\$ 0.45	\$ —	\$ —
Weighted average number of common shares outstanding-Basic	559	582	593	607	609
Weighted average number of common shares outstanding-Diluted	560	584	595	610	613
As of December 31:					
Cash, cash equivalents and short-term investments ⁽³⁾	\$ 3,424	\$ 4,511	\$ 5,056	\$ 5,169	\$ 4,949
Working capital ⁽³⁾⁽⁴⁾	4,628	5,900	6,272	6,182	5,195
Total assets ⁽³⁾⁽⁴⁾⁽⁵⁾	16,204	15,846	15,221	14,262	13,061
Total debt	738	745	873	878	1,283
Stockholders’ equity	11,022	11,424	10,669	10,728	9,278

- (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 historical accounting policies.
- (2) In March 2016, the 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 year ended December 31, 2019, the net excess tax benefit on stock-based compensation awards in our income tax provision was immaterial. 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 \$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 \$414 million and \$423 million in restricted time deposits as of December 31, 2019 and 2018, respectively. See [Note 11](#) to our consolidated financial statements.
- (4) On January 1, 2019, we adopted the New Lease Standard using the effective date method applied to all lease contracts existing as of January 1, 2019. Results for reporting periods beginning on January 1, 2019 are presented under the New Lease Standard, while prior period amounts are not adjusted and continue to be reported in accordance with our historical accounting policies. See [Note 7](#) to our consolidated financial statements.
- (5) In 2019, we changed our policy with regard to the presentation of certain amounts due to customers, such as discounts and rebates. See [Note 1](#) to our consolidated financial statements. Balances for 2019 and 2018 reflect the new presentation while prior period amounts are not adjusted and continue to be reported in accordance with our historical accounting policies.

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 services include digital services and solutions, consulting, application development, systems integration, application testing, application maintenance, infrastructure services and business process services. Digital services have become an increasingly important part of our portfolio, aligning with our clients' focus on becoming data-enabled, customer-centric and differentiated businesses. We tailor our services and solutions to specific industries with an integrated global delivery model that employs client service and delivery teams based at client locations and dedicated global and regional delivery centers.

In 2019, we initiated the execution of a multi-year plan aimed at accelerating revenue growth. As part of our 2020 Fit for Growth Plan, we have refined our strategic focus and launched a series of measures designed to improve our operational and commercial models and implement cost reductions.

We are aligning our strategic posture with our clients' needs to become more data-enabled, customer-centric and differentiated businesses. We are planning to invest significantly in technology, sales and marketing, talent re-skilling, acquisitions and partnerships to further sharpen our strategic positioning in key digital areas - IoT, AI, digital engineering and cloud, while working to maintain and optimize our core portfolio of services through efficiency, tooling and automation, delivery optimization, protection of renewals, industry alignment and geographic expansion. To support our strategy, we are increasing our investment in sales and marketing professionals to help us expand existing accounts and acquire new ones, and amplify our brand's stature in the marketplace. In addition, in January 2020, we introduced a new, more variable sales compensation structure that rewards our teams for selling the entire portfolio of our services and offerings. Further, we have improved the alignment of our sales professionals and client support personnel with our client accounts, based on the size and scope of the existing relationship as well as the potential for account expansion and growth.

The refinement of our strategic posture also highlighted that certain content-related work is not in line with our strategic vision for the Company. This work is largely focused on determining whether certain content violates client standards - and can involve objectionable materials. As part of our 2020 Fit for Growth Plan, we intend to exit this work over the course of the next year while our other content-related work will continue. We anticipate that this decision may negatively impact our relationship with the affected clients and estimate that we may lose revenues of \$225 million to \$255 million on an annualized basis within our Communications, Media and Technology segment in North America. We anticipate revenues will ramp down over the next one to two years and the impact on 2020 revenues is expected to be between \$180 million and \$200 million. In the meantime, we will comply with our contractual obligations and determine the best mutual path forward with the small number of affected clients.

The 2020 Fit for Growth Plan also involves certain measures, which commenced in the fourth quarter of 2019, to simplify our organizational model and optimize our cost structure in order to partially fund the investments required to execute on our strategy and advance our growth agenda. In 2019, we incurred \$48 million of employee separation, retention and facility exit costs under this plan, including \$5 million of costs related to our exit from certain content-related services. See [Note 4](#) to our consolidated financial statements for additional information. We expect to incur additional charges in the range of \$100 million to \$150 million in 2020, primarily related to severance and facility exit costs, under our 2020 Fit for Growth Plan. The optimization measures under this plan are expected to generate an annualized gross savings run rate, before anticipated investments, in the range of approximately \$500 million to \$550 million. The cost savings realized in 2020 is expected to be lower than the annualized run rate.

2019 Financial Results

The following table sets forth a summary of our financial results for the years ended December 31, 2019 and 2018:

			Increase / (Decrease)	
	2019	2018	\$	%
(Dollars in millions, except per share data)				
Revenues	\$ 16,783	\$ 16,125	\$ 658	4.1
Income from operations	2,453	2,801	(348)	(12.4)
Net income	1,842	2,101	(259)	(12.3)
Diluted earnings per share	3.29	3.60	(0.31)	(8.6)
<i>Other Financial Information¹</i>				
Adjusted Income From Operations	2,787	2,920	(133)	(4.6)
Adjusted Diluted EPS	3.99	4.02	(0.03)	(0.7)

During the year ended December 31, 2019, revenues increased by \$658 million as compared to the year ended December 31, 2018, representing growth of 4.1%, or 5.2% on a constant currency basis¹. Revenues from clients added during 2019, including those related to acquisitions, were \$234 million.

The following charts set forth revenues and revenue growth by business segment and geography for the year ended December 31, 2019:

Dollars in millions	Financial Services				Healthcare			
	Revenues	Increase / (Decrease)			Revenues	Increase / (Decrease)		
		\$	%	CC % ¹		\$	%	CC % ¹
North America	\$ 4,137	(25)	(0.6)	(0.6)	\$ 4,147	(107)	(2.5)	(2.5)
United Kingdom	484	3	0.6	4.0	130	39	42.9	46.8
Continental Europe	728	62	9.3	14.3	341	71	26.3	30.7
Europe - Total	1,212	65	5.7	10.0	471	110	30.5	34.8
Rest of World	520	(16)	(3.0)	—	77	24	45.3	45.5
Total	\$ 5,869	24	0.4	1.6	\$ 4,695	27	0.6	1.0

Dollars in millions	Products and Resources				Communications, Media and Technology			
	Revenues	Increase / (Decrease)			Revenues	Increase / (Decrease)		
		\$	%	CC % ¹		\$	%	CC % ¹
North America	\$ 2,678	281	11.7	11.7	\$ 1,764	284	19.2	19.2
United Kingdom	380	22	6.1	10.9	319	(25)	(7.3)	(3.1)
Continental Europe	453	13	3.0	8.8	169	(18)	(9.6)	(4.5)
Europe - Total	833	35	4.4	9.8	488	(43)	(8.1)	(3.6)
Rest of World	259	39	17.7	22.4	197	11	5.9	12.6
Total	\$ 3,770	355	10.4	12.0	\$ 2,449	252	11.5	13.1

Financial Services: Revenues in our Financial Services segment increased in our Europe region primarily due to Samlink revenues, while decreasing in our North America and Rest of World regions as certain banking clients continue to transition the support of some of their legacy systems and operations in-house or to captives.

¹ Constant currency revenue growth, Adjusted Income From Operations 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, as applicable.

Healthcare: Revenues from our Healthcare segment increased in our Europe and Rest of World regions, primarily due to revenues from our life sciences clients, including revenues from our acquisition of Zenith. Revenues in our North America region were negatively impacted by mergers within the healthcare industry, the establishment of an offshore captive by a large client, the Customer Dispute and a ramp down of a client relationship in which we were a subcontractor to a third party for the purpose of delivering healthcare-related systems implementation services to local government, partially offset by growth among our life sciences clients in this region. Revenue growth among our life sciences clients was driven by demand for our digital operations services and solutions.

Products and Resources: Revenue growth in our Products and Resources segment was primarily driven by our clients' adoption and integration of digital technologies and revenues from our recently completed acquisitions.

Communications, Media and Technology: Revenue growth in our Communications, Media and Technology segment was strongest in our North America region and was primarily driven by the demand from our technology clients for digital content services and solutions and revenues from our recently completed acquisitions. As previously noted, our decision to exit certain content-related services will affect future revenue growth in this segment.

In 2017, we began a realignment program with the objective of improving our client focus, our cost structure and the efficiency and effectiveness of our delivery while continuing to drive revenue growth. Under our realignment program, in 2019, we incurred \$22 million of Executive Transition Costs, \$64 million in employee separation costs, \$45 million in employee retention costs and \$38 million in third party realignment costs. We anticipate that the employee separations completed as part of our realignment program will reduce our compensation expense by approximately \$140 million on an annualized basis. We expect to incur \$17 million of additional realignment charges related to our retention program in the first half of 2020.

On a combined basis with our 2020 Fit for Growth Plan described above, during the year ended December 31, 2019, we incurred \$217 million in restructuring charges reported in the caption "Restructuring charges" in our consolidated statements of operations.

Our operating margin and Adjusted Operating Margin² decreased to 14.6% and 16.6%, respectively, for the year ended December 31, 2019 from 17.4% and 18.1%, respectively for the year ended December 31, 2018. The decreases in our operating margin and Adjusted Operating Margin² were due to an increase in costs related to our delivery personnel (including employees and subcontractors) outpacing revenue growth, the dilutive impact of our recently completed acquisitions, contract renegotiations with recently merged Healthcare clients and the Customer Dispute, partially offset by the benefit of lower incentive-based compensation accrual rates. Our 2019 GAAP operating margin was additionally negatively impacted by the incremental accrual related to the India Defined Contribution Obligation as described in [Note 15](#) and higher restructuring charges while our 2018 GAAP operating margin was negatively impacted by the initial funding of the Cognizant U.S. Foundation.

During the year ended December 31, 2019, we returned \$2,609 million to our stockholders through \$2,156 million in share repurchases and \$453 million in dividend payments. Our shares outstanding decreased to 548 million as of December 31, 2019 from 577 million as of December 31, 2018. 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 Matters

We accrued \$117 million in 2019 related to the India Defined Contribution Obligation as described in [Note 15](#) to our consolidated financial statements. It is possible that the Indian government will review the matter and there is a substantial question as to whether the Indian government will apply the Supreme Court's ruling on a retroactive basis. As such, the ultimate amount of our obligation may be materially different from the amount accrued.

We are involved in an ongoing dispute with the ITD described in [Note 11](#) to our consolidated financial statements. The dispute with the ITD is currently pending and no final decision has been reached.

² Adjusted Operating Margin 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 most directly comparable GAAP financial measure.

2020 Business Outlook

In 2020, we expect growing demand from our clients for digital services as they invest to transform into data-enabled, customer-centric and differentiated businesses. As our clients continue their efforts to optimize the cost of supporting their legacy systems and operations, our core portfolio of services may be subject to pricing pressure and lower demand as clients look to transition certain work in-house or to new or existing captives.

Our clients will likely continue to contend with industry-specific changes driven by evolving digital technologies, uncertainty in the regulatory environment, industry consolidation and convergence as well as international trade policies and other macroeconomic factors, which could affect their demand for our services. Client demand may also be impacted by uncertainty related to the potential economic and regulatory effects of the United Kingdom's exit from the European Union. Additionally, revenue from our technology clients will be affected by our strategic decision to exit certain content-related work under our 2020 Fit for Growth Plan.

We expect our 2020 financial results to be impacted by the initial cost optimization measures executed in 2019 as part of our 2020 Fit for Growth Plan, and the expected execution of additional measures under this plan in 2020. In addition, our 2020 results may be impacted by uncertainty regarding regulatory changes, including potential regulatory changes with respect to immigration and taxes as well as costs related to the potential resolution of legal and regulatory matters discussed in [Note 15](#) to our consolidated financial statements.

During 2020, we intend to continue to invest in our digital capabilities, our talent base and new service offerings across industries and geographies, while increasing our investment in sales and marketing professionals to help us expand existing accounts and acquire new ones. We will continue to pursue strategic acquisitions that we believe add new technologies or platforms that complement our existing services, improve our overall service delivery capabilities or expand our geographic presence. Additionally, we will continue to focus on maintaining and optimizing our core portfolio of services through efficiency, tooling and automation, delivery optimization, protection of renewals, industry alignment and geographic expansion. Finally, through the execution of our 2020 Fit for Growth Plan and other initiatives, we will 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, logistics, energy, and utilities; and travel and hospitality operating segments;
- Communications, Media and Technology, which includes our communications and media operating segment and our technology operating segment.

The services we provide are distributed among a number of clients in each of our business segments. A loss of a significant client or a few significant clients in a particular segment could materially reduce revenues for that segment. The services we provide to our larger clients are often critical to their operations and a termination of our services would typically require an extended transition period with gradually declining revenues. Nevertheless, the volume of work performed for specific clients may vary significantly from year to year.

In 2019, we made certain changes to the internal measurement of segment operating profits. See [Note 19](#) to our consolidated financial statements for additional information relating to this change and on our business segments.

Results of Operations

For a discussion of our results of operations for the year ended December 31, 2017, including a year-to-year comparison between 2018 and 2017, refer to Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" in our Annual Report Form 10-K for the year ended December 31, 2018.

The Year Ended December 31, 2019 Compared to The Year Ended December 31, 2018

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

	2019	% of Revenues	2018	% of Revenues	Increase / Decrease	
					\$	%
(Dollars in millions, except per share data)						
Revenues	\$ 16,783	100.0	\$ 16,125	100.0	\$ 658	4.1
Cost of revenues ⁽¹⁾	10,634	63.4	9,838	61.0	796	8.1
Selling, general and administrative expenses ⁽¹⁾	2,972	17.7	3,007	18.6	(35)	(1.2)
Restructuring charges	217	1.3	19	0.1	198	*
Depreciation and amortization expense	507	3.0	460	2.9	47	10.2
Income from operations	2,453	14.6	2,801	17.4	(348)	(12.4)
Other income (expense), net	90		(4)		94	*
Income before provision for income taxes	2,543	15.2	2,797	17.3	(254)	(9.1)
Provision for income taxes	(643)		(698)		55	(7.9)
Income (loss) from equity method investment	(58)		2		(60)	*
Net income	\$ 1,842	11.0	\$ 2,101	13.0	\$ (259)	(12.3)
Diluted EPS	\$ 3.29		\$ 3.60		\$ (0.31)	(8.6)
<i>Other Financial Information</i> ³						
Adjusted Income From Operations and Adjusted Operating Margin	\$ 2,787	16.6	\$ 2,920	18.1	(133)	(4.6)
Adjusted Diluted EPS	\$ 3.99		\$ 4.02		\$ (0.03)	(0.7)

(1) Exclusive of depreciation and amortization expense.

* Not meaningful

Revenues - Overall

During 2019, revenues increased by \$658 million as compared to 2018, representing growth of 4.1%, or 5.2% on a constant currency basis³. Revenues from clients added during 2019, including those related to acquisitions, were \$234 million. Growth was driven by our clients' adoption and integration of digital technologies, demand for our digital operations services and solutions as well as revenues from our recently completed acquisitions. This was partially offset by pricing pressure within our core portfolio of services as our clients continue their efforts to optimize the cost of supporting their legacy systems and operations.

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

	For the years ended December 31,	
	2019	2018
Top five clients	7.9%	8.6%
Top ten clients	14.6%	15.4%

³ Constant currency revenue growth, Adjusted Income from Operations, Adjusted Operating Margin 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, as applicable.

Revenues - Reportable Business Segments

Revenues by reportable business segment were as follows:

			Increase / (Decrease)		
	2019	2018	\$	%	CC% ⁴
(Dollars in millions)					
Financial Services	\$ 5,869	\$ 5,845	\$ 24	0.4	1.6
Healthcare	4,695	4,668	27	0.6	1.0
Products and Resources	3,770	3,415	355	10.4	12.0
Communications, Media and Technology	2,449	2,197	252	11.5	13.1
Total revenues	<u>\$ 16,783</u>	<u>\$ 16,125</u>	<u>\$ 658</u>	4.1	5.2

Financial Services

Revenues from our Financial Services segment grew 0.4%, or 1.6% on a constant currency basis⁴, in 2019. Revenues among our insurance clients increased by \$41 million as compared to a decrease of \$17 million from our banking clients. Revenues from clients added during 2019, including those related to Samlink, were \$90 million. Demand in this segment was driven by our clients' 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 AI in areas such as digital lending, fraud detection and next generation payments. Demand from certain banking clients has been and may continue to be negatively affected as they transition the support of some of their legacy systems and operations in-house or to captives.

Healthcare

Revenues from our Healthcare segment grew 0.6%, or 1.0% on a constant currency basis⁴, in 2019. Revenues in this segment increased by \$241 million among our life science clients compared to a decrease of \$214 million from our healthcare clients. Revenue growth among our life sciences clients was driven by revenues from Zenith and demand for our digital operations services and solutions. Revenues from our healthcare clients were negatively impacted by the mergers within the segment, the establishment of an offshore captive by a large client, the Customer Dispute and a ramp down of a client relationship in which we were a subcontractor to a third party for the purpose of delivering healthcare-related systems implementation services to local government, partially offset by revenues from Bolder, which we acquired in the second quarter of 2018. Revenues from clients added during 2019, including those related to acquisitions, were \$36 million.

Demand in this segment was driven by emerging industry trends, including enhanced compliance, integrated health management, claims investigative services and heightened focus on patient experience, as well as services that drive operational improvements in areas such as claims processing, enrollment, membership and billing. Demand was also created by the adoption and integration of digital technologies such as AI to shape personalized care plans and predictive data analytics to improve patient outcomes. Demand from our healthcare clients may continue to be affected by uncertainty in the regulatory environment and industry-specific trends, including industry consolidation and convergence. Demand among our life sciences clients may be affected by industry consolidation. 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.

Products and Resources

Revenues from our Products and Resources segment grew 10.4%, or 12.0% on a constant currency basis⁴, in 2019. Revenue growth was strongest among our retail and consumer goods clients, where revenue increased by \$187 million. Revenues from our manufacturing, logistics, energy and utilities clients increased by \$119 million while revenue from our travel and hospitality clients increased by \$49 million. Revenues from clients added during 2019, including those related to acquisitions, were \$69 million. Demand in this segment was driven by our clients' 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.

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.

Communications, Media and Technology

Revenues from our Communications, Media and Technology segment grew 11.5%, or 13.1% on a constant currency basis⁵ in 2019. Growth was stronger among our technology clients where revenues increased \$209 million as compared to an increase of \$43 million for our communications and media clients. Revenues from clients added during 2019, including those related to acquisitions were \$39 million. Demand in this segment is driven by our clients' needs to create differentiated user experiences, transition to agile development methodologies, enhance their networks, manage their digital content and adopt and integrate digital technologies, such as cloud, interactive and IoT. In 2020, revenues within this segment will be affected by our strategic decision to exit certain content-related services. We anticipate that this decision may negatively impact our relationship with the affected clients and estimate that we may lose revenues of \$225 million to \$255 million on an annualized basis. We anticipate revenues will ramp down over the next one to two years and the impact on 2020 revenues is expected to be between \$180 million and \$200 million. Additionally, demand among our technology clients may be affected by uncertainty in the regulatory environment while significant merger and acquisition activity may impact our clients in the communications and media industry.

Revenues - Geographic Locations

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

	2019	2018	Increase / (Decrease)		
			\$	%	CC % ⁵
(Dollars in millions)					
North America	\$ 12,726	\$ 12,293	\$ 433	3.5	3.6%
United Kingdom	1,313	1,274	39	3.1	7.1%
Continental Europe	1,691	1,563	128	8.2	13.3%
Europe - Total	3,004	2,837	167	5.9	10.5%
Rest of World	1,053	995	58	5.8	9.8%
Total revenues	\$ 16,783	\$ 16,125	\$ 658	4.1	5.2%

North America continues to be our largest market, representing 75.8% of total 2019 revenues and 65.8% of total revenue growth in 2019. Revenue growth in our North America region was driven by the demand for digital content services and solutions by clients in our Communications, Media and Technology segment, the adoption and integration of digital technologies by clients in our Products and Resources segment and revenues from recently completed acquisitions, partially offset by lower revenue in our Healthcare segment as described above. In 2020, revenues in our North America region will be affected by our strategic decision to exit certain content-related services in our Communications, Media and Technology segment. Revenue growth in our Continental Europe and the United Kingdom regions was driven by our life science clients and includes revenues related to our recently completed acquisitions. Revenue growth in our Rest of World region was driven by strength in our Products and Resources and Healthcare segments. Revenue growth in our North America and Rest of World regions was negatively affected as certain banking clients in these regions transition the support of some of their legacy systems and operations in-house or to captives. We believe that there are opportunities for growth across all of our geographic 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, subcontracting and equipment costs relating to revenues. Our cost of revenues increased by 8.1% during 2019 as compared to 2018, increasing as a percentage of revenues to 63.4% during the 2019 period compared to 61.0% in 2018. The increase in cost of revenues, as a percentage of revenues, was due primarily to an increase in costs related to our delivery personnel (including employees and subcontractors) as headcount growth outpaced revenue growth, partially offset by lower incentive-based compensation accrual rates in 2019.

⁵ Constant currency revenue growth is not a measurement of financial performance prepared in accordance with GAAP. See "Non-GAAP Financial Measures" for more information.

SG&A Expenses

SG&A expenses consist primarily of salaries, incentive-based compensation, stock-based compensation expense, employee benefits, immigration, travel, marketing, communications, management, finance, administrative and occupancy costs. SG&A expenses decreased by 1.2% during 2019 as compared to 2018, decreasing as a percentage of revenues to 17.7% in 2019 as compared to 18.6% in 2018. The decrease, as a percentage of revenues, was due primarily to a decrease in compensation costs, partially offset by costs related to our recently completed acquisitions. Additionally, in 2019 we recorded the incremental accrual related to the India Defined Contribution Obligation as described in [Note 15](#) to our consolidated financial statements. In 2018, we recorded a \$100 million charge related to the initial funding of the Cognizant U.S. Foundation.

Restructuring Charges

Our restructuring charges consist of our 2020 Fit for Growth Plan, which was announced in the fourth quarter of 2019, and our realignment program. Restructuring charges were \$217 million or 1.3%, as a percentage of revenues during 2019, as compared to \$19 million or 0.1%, as a percentage of revenues in 2018. For further detail on our restructuring charges see [Note 4](#) to our consolidated financial statements.

Operating Margin - Overall

Our operating margin and Adjusted Operating Margin⁶ decreased to 14.6% and 16.6%, respectively in 2019 from 17.4% and 18.1%, respectively, during 2018. The decreases in our operating margin and Adjusted Operating Margin⁶ were due to an increase in costs related to our delivery personnel (including employees and subcontractors) outpacing revenue growth, the dilutive impact of our recently completed acquisitions, contract renegotiations with recently merged Healthcare clients and the Customer Dispute, partially offset by the impact of lower incentive-based compensation accrual rates. Our 2019 GAAP operating margin was additionally negatively impacted by the incremental accrual related to the India Defined Contribution Obligation as described in [Note 15](#) to our consolidated financial statements and higher realignment charges while our 2018 GAAP operating margin was negatively impacted by the initial funding of the Cognizant U.S. Foundation.

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 53 basis points or 0.53 percentage points in 2019, while in 2018 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. 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, 2019, the settlement of cash flow hedges had an immaterial impact on our operating margin as compared to a positive impact of approximately 44 basis points or 0.44 percentage points in 2018.

Our most significant costs are the salaries and related benefits for our employees. These costs are affected by the impact of inflation. 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.

We finished the year with approximately 292,500 employees, which is an increase of approximately 10,900 over the prior year end. For the three months ended December 31, 2019, annualized turnover, including both voluntary and involuntary, was approximately 20.8%. Turnover for the years ended December 31, 2019 and 2018, including both voluntary and involuntary, was approximately 21.7% and 20.8%, respectively. Attrition is weighted more towards the junior members of our staff.

⁶ Adjusted Operating Margin 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 most directly comparable GAAP financial measure.

Segment Operating Profit and Margin

Segment operating profit and margin were as follows:

	2019	Operating Margin %	2018	Operating Margin %	Increase /(Decrease)
(Dollars in millions)					
Financial Services	\$ 1,605	27.3	\$ 1,713	29.3	\$ (108)
Healthcare	1,261	26.9	1,416	30.3	(155)
Products and Resources	1,028	27.3	1,023	30.0	5
Communications, Media and Technology	732	29.9	692	31.5	40
Total segment operating profit and margin	4,626	27.6	4,844	30.0	(218)
Less: unallocated costs	2,173		2,043		130
Income from operations	\$ 2,453	14.6	\$ 2,801	17.4	\$ (348)

Across all of our operating segments, operating margins decreased as costs related to our delivery personnel (including employees and subcontractors) outpaced revenue growth. Additionally, operating margins in Healthcare were negatively affected by mergers among several of our healthcare clients, the Customer Dispute and the impairment of certain capitalized costs related to a large volume-based contract.

Certain SG&A expenses, the excess or shortfall of incentive compensation for commercial and delivery personnel as compared to target, costs related to our 2020 Fit for Growth Plan and 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 above as “unallocated costs” and adjusted against our total income from operations. The increase in unallocated costs during 2019 compared to 2018 is primarily due to higher realignment charges incurred in 2019 and the India Defined Contribution Obligation recorded in 2019, partially offset by a shortfall of incentive-based compensation as compared to target in 2019 and the initial funding of the Cognizant U.S. Foundation recorded in 2018.

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:

	2019	2018	Increase / Decrease
(in millions)			
Foreign currency exchange (losses)	\$ (73)	\$ (183)	\$ 110
Gains on foreign exchange forward contracts not designated as hedging instruments	8	31	(23)
Foreign currency exchange gains (losses), net	(65)	(152)	87
Interest income	176	177	(1)
Interest expense	(26)	(27)	1
Other, net	5	(2)	7
Total other income (expense), net	\$ 90	\$ (4)	\$ 94

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 Euro and Indian rupee and other non-U.S. dollar denominated net monetary assets and liabilities. As of December 31, 2019, the notional value of our undesignated hedges was \$702 million.

Provision for Income Taxes

The provision for income taxes was \$643 million in 2019 and \$698 million in 2018. The effective income tax rate remained relatively flat at 25.3% in 2019 as compared to 25.0% in 2018. In the fourth quarter of 2019, we recorded a one-time net income tax expense of \$21 million as a result of the enactment of the India Tax Law. See [Note 11](#) to our consolidated financial statements for additional information.

Income (loss) from equity method investments

In 2019, we recorded an impairment charge of \$57 million on one of our equity method investments as further described in [Note 5](#) to our consolidated financial statements.

Net Income

Net income was \$1,842 million in 2019 and \$2,101 million in 2018. Net income as a percentage of revenues decreased to 11.0% in 2019 from 13.0% in 2018. The decrease in net income is primarily due to a decrease in income from operations, partially offset by lower foreign exchange losses as compared to 2018.

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 below, should be carefully evaluated.

Our non-GAAP financial measures, Adjusted Operating Margin, Adjusted Income From Operations and Adjusted Diluted EPS exclude unusual items. Additionally, Adjusted Diluted EPS excludes net non-operating foreign currency exchange gains or losses and the tax impact of all the 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. 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 the presentation of our non-GAAP financial measures (Adjusted Income from Operations, Adjusted Operating Margin, Adjusted Diluted EPS and constant currency revenue growth) 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 such as our 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:

	2019	% of Revenues	2018	% of Revenues
(Dollars in millions, except per share data)				
GAAP income from operations and operating margin	\$ 2,453	14.6%	\$ 2,801	17.4%
Realignment charges ⁽¹⁾	169	1.0	19	0.1
Incremental accrual related to the India Defined Contribution Obligation ⁽²⁾	117	0.7	—	—
2020 Fit for Growth Plan restructuring charges ⁽³⁾	48	0.3	—	—
Initial funding of Cognizant U.S. Foundation ⁽⁴⁾	—	—	100	0.6
Adjusted Income From Operations and Adjusted Operating Margin	<u>2,787</u>	<u>16.6</u>	<u>2,920</u>	<u>18.1</u>
GAAP diluted EPS	\$ 3.29		\$ 3.60	
Effect of above adjustments, pre-tax	0.60		0.20	
Effect of non-operating foreign currency exchange losses (gains), pre-tax ⁽⁵⁾	0.11		0.26	
Tax effect of above adjustments ⁽⁶⁾	(0.15)		(0.03)	
Effect of the equity method investment impairment ⁽⁷⁾	0.10		—	
Effect of the India Tax Law ⁽⁸⁾	0.04		—	
Effect of net incremental income tax expense related to the Tax Reform Act ⁽⁹⁾	—		(0.01)	
Adjusted Diluted EPS	<u>\$ 3.99</u>		<u>\$ 4.02</u>	

- (1) As part of our realignment program, during the year ended December 31, 2019, we incurred Executive Transition Costs, employee separation costs, employee retention costs and third party realignment costs. See [Note 4](#) to our consolidated financial statements for additional information.
- (2) In 2019, we recorded an accrual of \$117 million related to the India Defined Contribution Obligation as further described in [Note 15](#) to our consolidated financial statements.
- (3) During 2019, we incurred certain employee separation, employee retention and facility exit costs under our 2020 Fit for Growth Plan. See [Note 4](#) to our consolidated financial statements for additional information.
- (4) In 2018, we provided \$100 million of initial funding to Cognizant U.S. Foundation. This cost is reported in "Selling, general and administrative expenses" in our consolidated statement of operations.
- (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,	
	2019	2018
(in millions)		
Non-GAAP income tax benefit (expense) related to:		
Realignment charges	\$ 43	\$ 5
Foreign currency exchange gains and losses	(1)	(12)
2020 Fit for Growth Plan restructuring charges	13	—
Incremental accrual related to the India Defined Contribution Obligation	31	—
Initial funding of Cognizant U.S. Foundation	—	28

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 2019, we recorded an impairment charge of \$57 million on one of our equity investments as further described in [Note 5](#) to our consolidated financial statements.

- (8) In 2019, we recorded a one-time net income tax expense of \$21 million as a result of the enactment of a new tax law in India. See [Note 11](#) to our consolidated financial statements for additional information.
- (9) 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.

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, 2019, we had cash, cash equivalents and short-term investments of \$3,424 million, of which \$414 million was restricted and not available for use as a result of our ongoing dispute with the ITD as described in [Note 11](#) to our consolidated financial statements. Additionally, as of December 31, 2019, we had available capacity under our credit facilities of approximately \$1,932 million.

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

	2019	2018	Increase / Decrease
	(in millions)		
Net cash provided by (used in):			
Operating activities	\$ 2,499	\$ 2,592	\$ (93)
Investing activities	1,588	(1,627)	3,215
Financing activities	(2,569)	(1,693)	(876)

Operating activities

The decrease in cash generated from operating activities for 2019 compared to 2018 was primarily due to the decrease in income from operations and an increase in the cash taxes paid during 2019, partially offset by improved collections of trade accounts receivable in 2019.

We monitor turnover, aging and the collection of trade accounts receivable by client. Our DSO calculation includes trade accounts receivable, net of allowance for doubtful accounts, and contract assets, reduced by the uncollected portion of our deferred revenue. DSO was 73 days as of December 31, 2019 and 74 days as of December 31, 2018. As further described in [Note 1](#) to our consolidated financial statements, during the fourth quarter of 2019, we changed our policy with regard to the presentation of certain amounts due to customers, such as discounts and rebates. This change in policy had the effect of reducing our DSO by two days and one day as of December 31, 2019 and December 31, 2018, respectively.

Investing activities

Net cash provided by investing activities in 2019 was driven by net sales of investments partially offset by payments for acquisitions and outflows for capital expenditures. Net cash used in investing activities in 2018 is related to payments for acquisitions, outflows for capital expenditures and net purchases of investments.

Financing activities

The increase in cash used in financing activities in 2019 compared to 2018 is primarily attributable to higher repurchases of common stock in 2019, including our \$600 million 2019 ASR agreement.

We have a Credit Agreement providing for a \$750 million Term Loan and a \$1,750 million unsecured revolving credit facility, which are due to mature in November 2023. We are required under the Credit Agreement to make scheduled quarterly principal payments on the Term Loan. See [Note 10](#) to our consolidated financial statements. We believe that we currently meet all conditions set forth in the 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, 2019 and through the date of this filing.

In September 2019, our India subsidiary entered into a 13 billion Indian rupee (\$182 million at the December 31, 2019 exchange rate) working capital facility, which requires us to repay any balances drawn down within 90 days from the date of disbursement. As of December 31, 2019, there was no balance outstanding under the working capital facility.

During 2019, we returned \$2,609 million to our stockholders through \$2,156 million in share repurchases under our stock repurchase program and \$453 million in dividend payments funded primarily with the proceeds from the liquidation of our available-for-sale investment portfolio and operating cash flows. Our shares outstanding decreased to 548 million as of December 31, 2019.

from 577 million as of December 31, 2018. In February 2020, our Board of Directors approved a 10% or \$0.02 increase to our quarterly cash dividends and increased our stock repurchase program authorization from \$5.5 billion to \$7.5 billion, excluding fees and expenses. We review our capital return plan on an ongoing 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, 2019, the amount of our cash, cash equivalents and short-term investments held outside the United States was \$3,097 million, of which \$2,414 million was in India. As further described in [Note 11](#) to our consolidated financial statements, certain short-term investment balances in India totaling \$414 million as of December 31, 2019, were restricted in connection with our dispute with the ITD. The affected balances may continue to remain restricted and unavailable for our use while the dispute is ongoing.

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. We consider our earnings in India to be indefinitely reinvested, which 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, 2019, the amount of unrepatriated Indian earnings was approximately \$5,242 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 \$1,101 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.

On February 1, 2020, the India Finance Minister presented the Budget, which contains a number of proposed provisions related to tax, including a replacement of the dividend distribution tax, which is due from the dividend payer, with a tax payable by the shareholder receiving the dividend. If enacted, these provisions would significantly reduce the tax rate applicable to any cash we were to repatriate from India. These provisions are proposed to be effective for the India financial year starting April 1, 2020. We are in the process of reviewing the various tax provisions outlined in the Budget, and will finalize our assessment once the Budget proposals are passed into law by the Parliament of India.

We expect our operating cash flow, cash and investment balances (excluding the \$414 million of India restricted assets), together with our available capacity under our revolving credit facilities 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.

Commitments and Contingencies

Commitments

As of December 31, 2019, 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	3-5 years	More than 5 years
	(in millions)				
Long-term debt obligations ⁽¹⁾	\$ 741	\$ 38	\$ 76	\$ 627	\$ —
Interest on long-term debt ⁽²⁾	69	19	36	14	—
Finance lease obligations	27	11	15	1	—
Operating lease obligations	1,134	249	384	228	273
Other purchase commitments ⁽³⁾	233	125	101	7	—
Tax Reform Act transition tax ⁽⁴⁾	528	50	101	220	157
Total	\$ 2,732	\$ 492	\$ 713	\$ 1,097	\$ 430

(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, 2019.

(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 2026.

As of December 31, 2019, we had \$152 million of unrecognized income tax benefits. This represents the income tax benefits associated with certain income 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 2019 and 2018 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 our 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](#) to our 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. Net changes in estimates of such future costs and contract losses 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 applications for APAs before the taxing authorities in some of our most significant jurisdictions. 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 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, client 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.

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 2019 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 2019, we concluded that the goodwill and indefinite-lived intangible asset balances in each of our reporting units were not at risk of impairment. As of December 31, 2019, our goodwill and indefinite-lived intangible asset balances were \$3,979 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 group 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 asset groups. The impairment loss is determined as the amount by which the carrying amount of the asset group exceeds its fair value. Assessing the fair value of asset groups 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 whether an exposure is considered probable and 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 Exchange Act) 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 margin, earnings, capital expenditures, anticipated effective income tax rate and income tax expense, liquidity, access to capital, capital return plan, investment strategies, cost management, realignment program, 2020 Fit for Growth Plan, plans and objectives, including those related to our digital practice areas, investment in our business, potential acquisitions, industry trends, client behaviors and trends, the outcome of regulatory and litigation matters, the incremental accrual related to the India Defined Contribution Obligation 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 clients and operations are concentrated;
- our ability to attract, train and retain skilled professionals, including highly skilled technical personnel to satisfy client 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 successfully implement our 2020 Fit for Growth Plan and achieve the anticipated benefits from the plan;
- our ability to meet specified service levels or milestones required by certain of our contracts;
- intense and evolving competition and significant technological advances that our service offerings must keep pace with in the rapidly changing markets we compete in;

[Table of Contents](#)

- legal, reputational and financial risks if we fail to protect client 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 clients;
- 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 clients;
- 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.

Glossary

Defined Term	Definition
Adjusted Diluted EPS	Adjusted diluted earnings per share
AI	Artificial Intelligence
APAs	Advanced Pricing Agreements
ASC	Accounting Standards Codification
ASR	Accelerated Stock Repurchase
ASU	Accounting Standards Update
ATG	Advanced Technology Group, Inc.
Bolder	Bolder Healthcare Solutions
Brilliant	Brilliant Service Co., Ltd.
Budget	Union Budget of India for 2020-2021
CC	Constant Currency
CCA	Cloud Computing Arrangement
Contino	Contino Holdings Inc.
Court	Madras High Court
CPI	Consumer Price Index
Credit Agreement	Credit agreement with a commercial bank syndicate dated November 5, 2018
CTS India	Our principal operating subsidiary in India
Customer Dispute	An ongoing dispute with a healthcare client related to a large volume-based contract
Division Bench	Division Bench of the Madras High Court
DevOps	Agile relationship between development and IT operations
DOJ	United States Department of Justice
DSO	Days Sales Outstanding
EPS	Earnings Per Share
EU	European Union
Exchange Act	Securities Exchange Act of 1934, as amended
Executive Transition Costs	Costs associated with our CEO transition and the departure of our President
FASB	Financial Accounting Standards Board
FCPA	Foreign Corrupt Practices Act
GAAP	Generally Accepted Accounting Principles
Goodwin	Goodwin Procter LLP
HR	Human Resources
India Defined Contribution Obligation	Certain statutory defined contribution obligations of employees and employers in India
India Tax Law	New tax regime enacted by the Government of India effective April 1, 2019
IP	Intellectual Property
ISDA	International Swaps and Derivatives Association
IoT	Internet of Things
IT	Information Technology
ITD	Indian Income Tax Department
MAT	Minimum Alternative Tax
Mustache	Mustache, LLC
Nasdaq	Nasdaq Global Select Market
Netcentric	Netcentric AG
New Revenue Standard	ASC Topic 606 "Revenue from Contracts with Customers"

[Table of Contents](#)

New Lease Standard	ASC Topic 842 “Leases”
OECD	Organization for Economic Co-operation and Development
PSU	Performance Stock Units
Purchase Plan	Cognizant Technology Solutions Corporation 2004 Employee Stock Purchase Plan, as amended
ROU	Right of Use
RSU	Restricted Stock Units
SaaSfocus	SaaSforce Consulting Private Limited
Samlink	Oy Samlink Ab
SEC	United States Securities and Exchange Commission
SEZs	Special Economic Zones
SLP	Special Leave Petition
Softvision	Softvision, LLC
Tax Reform Act	Tax Cuts and Jobs Act
Term Loan	Unsecured term loan
TMG	TMG Health, Inc.
Top Tier	Top Tier Consulting
Zenith	Zenith Technologies Limited
Zone	Zone Limited
2009 Incentive Plan	Cognizant Technology Solutions Corporation Amended and Restated 2009 Incentive Compensation Plan
2017 Incentive Plan	Cognizant Technology Solutions Corporation 2017 Incentive Award Plan

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 United Kingdom's exit from the European Union 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 clients in the United Kingdom, Continental Europe and Rest of World represented 7.8%, 10.1% and 6.3%, respectively, of our 2019 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 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 20.7% of our global operating costs during 2019, 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, 2019, 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)
2020	\$ 1,505	74.1
2021	883	76.5
Total	<u>\$ 2,388</u>	<u>75.0</u>

As of December 31, 2019, the net unrealized gain on our outstanding foreign exchange forward contracts designated as cash flow hedges was \$31 million. Based upon a sensitivity analysis at December 31, 2019, 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 \$232 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 2019, we reported foreign currency exchange losses, exclusive of hedging gains, of approximately \$73 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, 2019, we had \$2,414 million in cash, cash equivalents and short-term 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 \$244 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 2020. At December 31, 2019, the notional value of these outstanding contracts was \$702 million and the net unrealized gain was \$2 million. Based upon a sensitivity analysis of our foreign exchange forward contracts at December 31, 2019, 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 \$18 million.

Interest Rate Risk

We have a Credit Agreement providing for a \$750 million unsecured Term Loan and a \$1,750 million unsecured revolving credit facility, which are due to mature in November 2023. We are required under the Credit Agreement to make scheduled quarterly principal payments on the Term Loan.

The Credit Agreement requires interest to be paid, at our option, at either the ABR or the Eurocurrency Rate (each as defined in the Credit Agreement), plus, in each case, an Applicable Margin (as defined in the 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 Credit Agreement). Under the 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 held-to-maturity investment securities are subject to market risk from changes in interest rates. As of December 31, 2019, the fair market value of our held-to-maturity portfolio was \$287 million. As of December 31, 2019, a 10% change in interest rates, with all other variables held constant, would have an immaterial effect on the fair market value of our 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.

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) as of December 31, 2019. Based on this evaluation, our chief executive officer and our chief financial officer concluded that, as of December 31, 2019, 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 Securities Exchange Act of 1934, as amended) that occurred during the fiscal quarter ended December 31, 2019 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 Securities Exchange Act of 1934, as amended 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, 2019. 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, 2019, 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

None.

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 2020 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 2020 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 2020 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 2020 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 2020 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

Number	Exhibit Description	Incorporated by Reference				Filed or Furnished Herewith
		Form	File No.	Exhibit	Date	
3.1	Restated Certificate of Incorporation, dated June 5, 2018	8-K	000-24429	3.1	6/7/2018	
3.2	Amended and Restated Bylaws, as adopted on September 24, 2018	8-K	000-24429	3.1	9/20/2018	
4.1	Specimen Certificate for shares of Class A common stock	S-4/A	333-101216	4.2	1/30/2003	
4.2	Description of Capital Stock					Filed
10.1†	Form of Indemnification Agreement for Directors and Officers	10-Q	000-24429	10.1	8/7/2013	
10.2†	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: Brian Humphries, Karen McLoughlin, Matthew Friedrich, Becky Schmitt, Dharmendra Kumar Sinha and Robert Telesmanic	10-K	000-24429	10.3	2/27/2018	
10.3†	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: Malcolm Frank and Santosh Thomas	10-K	000-24429	10.4	2/26/2013	
10.4†	Offer Letter, by and between the Company and Brian Humphries, acknowledged and agreed November 30, 2018	10-K	000-24429	10.4	2/19/2019	
10.5†	2004 Employee Stock Purchase Plan (as amended and restated effective as of February 27, 2018)	8-K	000-24429	10.1	6/7/2018	
10.6†	Form of Stock Option Certificate	10-Q	000-24429	10.1	11/8/2004	
10.7†	Cognizant Technology Solutions Corporation Amended and Restated 2009 Incentive Compensation Plan, effective March 9, 2015	10-Q	000-24429	10.1	5/4/2015	
10.8†	Form of Cognizant Technology Solutions Corporation Stock Option Agreement	8-K	000-24429	10.1	7/6/2009	
10.9†	Form of Cognizant Technology Solutions Corporation Notice of Grant of Stock Option	8-K	000-24429	10.2	7/6/2009	

[Table of Contents](#)

Number	Exhibit Description	Incorporated by Reference				Filed or Furnished Herewith
		Form	File No.	Exhibit	Date	
10.10†	Form of Cognizant Technology Solutions Corporation Restricted Stock Unit Award Agreement Time-Based Vesting	8-K	000-24429	10.3	7/6/2009	
10.11†	Form of Cognizant Technology Solutions Corporation Notice of Award of Restricted Stock Units Time-Based Vesting	8-K	000-24429	10.4	7/6/2009	
10.12†	Form of Cognizant Technology Solutions Corporation Restricted Stock Unit Award Agreement Performance-Based Vesting	8-K	000-24429	10.5	7/6/2009	
10.13†	Form of Cognizant Technology Solutions Corporation Notice of Award of Restricted Stock Units Performance-Based Vesting	8-K	000-24429	10.6	7/6/2009	
10.14†	Form of Restricted Stock Unit Award Agreement Non-Employee Director Deferred Issuance	8-K	000-24429	10.7	7/6/2009	
10.15†	Form of Cognizant Technology Solutions Corporation Notice of Award of Restricted Stock Units Non-Employee Director Deferred Issuance	8-K	000-24429	10.8	7/6/2009	
10.16†	Cognizant Technology Solutions Corporation 2017 Incentive Award Plan	8-K	000-24429	10.1	6/7/2017	
10.17†	Form of Restricted Stock Unit Award Grant Notice	10-Q	000-24429	10.2	8/3/2017	
10.18†	Form of Performance-Based Restricted Stock Unit Award Grant Notice	10-Q	000-24429	10.3	8/3/2017	
10.19†	Form of Restricted Stock Unit Award Grant Notice	10-Q	000-24429	10.4	8/3/2017	
10.20†	Form of Stock Option Grant Notice and Stock Option Agreement	10-Q	000-24429	10.5	8/3/2017	
10.21	Form of Accelerated Stock Repurchase Agreement	8-K	000-24429	10.1	3/14/2017	
10.22	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.	8-K	000-24429	10.1	11/9/2018	
10.23	Offer of Settlement, dated October 11, 2018, by Cognizant Technology Solutions Corporation to the U.S. Securities and Exchange Commission	10-K	000-24429	10.27	2/19/2019	
21.1	List of subsidiaries of the Company					Filed
23.1	Consent of PricewaterhouseCoopers LLP					Filed
31.1	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)					Filed
31.2	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)					Filed
32.1	Certification Pursuant to 18 U.S.C. Section 1350 (Chief Executive Officer)					Furnished
32.2	Certification Pursuant to 18 U.S.C. Section 1350 (Chief Financial Officer)					Furnished

Number	Exhibit Description	Incorporated by Reference				Filed or Furnished Herewith
		Form	File No.	Exhibit	Date	
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document.					Filed
101.SCH	Inline XBRL Taxonomy Extension Schema Document					Filed
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document					Filed
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document					Filed
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document					Filed
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document					Filed
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					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.

COGNIZANT TECHNOLOGY SOLUTIONS CORPORATION
INDEX TO CONSOLIDATED FINANCIAL STATEMENTS
AND FINANCIAL STATEMENT SCHEDULE

	<u>Page</u>
Consolidated Financial Statements:	
Report of Independent Registered Public Accounting Firm	F-2
Consolidated Statements of Financial Position as of December 31, 2019 and 2018	F-4
Consolidated Statements of Operations for the years ended December 31, 2019, 2018 and 2017	F-5
Consolidated Statements of Comprehensive Income for the years ended December 31, 2019, 2018 and 2017	F-6
Consolidated Statements of Stockholders' Equity for the years ended December 31, 2019, 2018 and 2017	F-7
Consolidated Statements of Cash Flows for the years ended December 31, 2019, 2018 and 2017	F-8
Notes to Consolidated Financial Statements	F-9
Financial Statement Schedule:	
Schedule of Valuation and Qualifying Accounts for the years ended December 31, 2019, 2018 and 2017	F-47

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, 2019 and 2018, 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, 2019, 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, 2019, 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, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 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, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Changes in Accounting Principles

As discussed in Note 1 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019 and 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.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Revenue Recognition - Expected Labor Costs to Complete for Certain Fixed-Price Contracts

As described in Notes 1 and 2 to the consolidated financial statements, fixed-price contracts comprised \$6 billion of the Company's total revenues for the year ended December 31, 2019, which includes performance obligations where control is transferred over time. 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. Management recognizes revenues related to fixed-price contracts for application development and systems integration services, consulting or other technology services 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. The cost to cost method requires estimation of future costs, which is updated as the project progresses to reflect the latest available information. Revenues related to fixed-price application maintenance, testing and business process services are recognized based on management's right to invoice for services performed for contracts in which the invoicing is representative of the value being delivered. If management's 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 principal considerations for our determination that performing procedures relating to expected labor costs to complete for certain fixed-price contracts is a critical audit matter are the significant judgment used by management in developing total expected labor costs to complete fixed-price contracts and the high degree of auditor judgment, subjectivity, and effort in performing procedures and evaluating audit evidence relating to total expected labor costs.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to the revenue recognition process, including over the development of expected labor costs to complete fixed-price contracts. These procedures also included, among others, evaluating and testing management's process for developing total expected labor costs for a sample of contracts, which included evaluating the reasonableness of the total expected labor cost assumptions used by management. Evaluating the reasonableness of the assumptions related to the total expected labor costs involved assessing management's ability to reasonably develop total expected labor costs by (i) performing a comparison of actual labor costs incurred with expected labor costs for similar completed projects and (ii) evaluating the timely identification of circumstances that may warrant a modification to previous labor cost estimates, including actual labor costs in excess of estimates.

/s/ PricewaterhouseCoopers LLP
New York, New York
February 14, 2020

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,	
	2019	2018
Assets		
Current assets:		
Cash and cash equivalents	\$ 2,645	\$ 1,161
Short-term investments	779	3,350
Trade accounts receivable, net of allowances of \$67 and \$78, respectively	3,256	3,190
Other current assets	931	909
Total current assets	7,611	8,610
Property and equipment, net	1,309	1,394
Operating lease assets, net	926	—
Goodwill	3,979	3,481
Intangible assets, net	1,041	1,150
Deferred income tax assets, net	585	442
Long-term investments	17	80
Other noncurrent assets	736	689
Total assets	\$ 16,204	\$ 15,846
Liabilities and Stockholders' Equity		
Current liabilities:		
Accounts payable	\$ 239	\$ 215
Deferred revenue	313	286
Short-term debt	38	9
Operating lease liabilities	202	—
Accrued expenses and other current liabilities	2,191	2,200
Total current liabilities	2,983	2,710
Deferred revenue, noncurrent	23	62
Operating lease liabilities, noncurrent	745	—
Deferred income tax liabilities, net	35	183
Long-term debt	700	736
Long-term income taxes payable	478	478
Other noncurrent liabilities	218	253
Total liabilities	5,182	4,422
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, 548 and 577 shares issued and outstanding at December 31, 2019 and 2018, respectively	5	6
Additional paid-in capital	33	47
Retained earnings	11,022	11,485
Accumulated other comprehensive income (loss)	(38)	(114)
Total stockholders' equity	11,022	11,424
Total liabilities and stockholders' equity	\$ 16,204	\$ 15,846

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,		
	2019	2018	2017
Revenues	\$ 16,783	\$ 16,125	\$ 14,810
Operating expenses:			
Cost of revenues (exclusive of depreciation and amortization expense shown separately below)	10,634	9,838	9,152
Selling, general and administrative expenses	2,972	3,007	2,697
Restructuring charges	217	19	72
Depreciation and amortization expense	507	460	408
Income from operations	2,453	2,801	2,481
Other income (expense), net:			
Interest income	176	177	133
Interest expense	(26)	(27)	(23)
Foreign currency exchange gains (losses), net	(65)	(152)	67
Other, net	5	(2)	(3)
Total other income (expense), net	90	(4)	174
Income before provision for income taxes	2,543	2,797	2,655
Provision for income taxes	(643)	(698)	(1,153)
Income (loss) from equity method investments	(58)	2	2
Net income	\$ 1,842	\$ 2,101	\$ 1,504
Basic earnings per share	\$ 3.30	\$ 3.61	\$ 2.54
Diluted earnings per share	\$ 3.29	\$ 3.60	\$ 2.53
Weighted average number of common shares outstanding—Basic	559	582	593
Dilutive effect of shares issuable under stock-based compensation plans	1	2	2
Weighted average number of common shares outstanding—Diluted	560	584	595

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,		
	2019	2018	2017
Net income	\$ 1,842	\$ 2,101	\$ 1,504
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustments	39	(65)	111
Change in unrealized gains and losses on cash flow hedges	29	(118)	76
Change in unrealized losses on available-for-sale investment securities	8	—	(3)
Other comprehensive income (loss)	76	(183)	184
Comprehensive income	<u>\$ 1,918</u>	<u>\$ 1,918</u>	<u>\$ 1,688</u>

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, 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
Cumulative effect of changes in accounting principle ⁽²⁾	—	—	—	2	—	2
Net income	—	—	—	1,842	—	1,842
Other comprehensive income (loss)	—	—	—	—	76	76
Common stock issued, stock-based compensation plans	7	—	159	—	—	159
Stock-based compensation expense	—	—	217	—	—	217
Repurchases of common stock	(36)	(1)	(390)	(1,856)	—	(2,247)
Dividends declared, \$0.80 per share	—	—	—	(451)	—	(451)
Balance, December 31, 2019	548	\$ 5	\$ 33	\$ 11,022	\$ (38)	\$ 11,022

(1) Reflects the adoption of the New Revenue Standard as well as ASU 2018-02 "Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income" on January 1, 2018.

(2) Reflects the adoption of the New Lease Standard as described in [Note 1](#) and [Note 7](#).

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,		
	2019	2018	2017
Cash flows from operating activities:			
Net income	\$ 1,842	\$ 2,101	\$ 1,504
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	526	498	443
Deferred income taxes	(306)	8	124
Stock-based compensation expense	217	267	221
Other	119	125	(71)
Changes in assets and liabilities:			
Trade accounts receivable	37	(365)	(249)
Other current and noncurrent assets	159	(8)	(270)
Accounts payable	8	(4)	16
Deferred revenue, current and noncurrent	56	(86)	18
Other current and noncurrent liabilities	(159)	56	671
Net cash provided by operating activities	<u>2,499</u>	<u>2,592</u>	<u>2,407</u>
Cash flows from investing activities:			
Purchases of property and equipment	(392)	(377)	(284)
Purchases of available-for-sale investment securities	(333)	(1,630)	(3,120)
Proceeds from maturity or sale of available-for-sale investment securities	2,107	1,838	3,404
Purchases of held-to-maturity investment securities	(693)	(1,363)	(1,221)
Proceeds from maturity of held-to-maturity investment securities	1,498	1,164	404
Purchases of other investments	(483)	(513)	(385)
Proceeds from maturity or sale of other investments	501	365	836
Payments for business combinations, net of cash acquired, and equity and cost method investments	(617)	(1,111)	(216)
Net cash provided by (used in) investing activities	<u>1,588</u>	<u>(1,627)</u>	<u>(582)</u>
Cash flows from financing activities:			
Issuance of common stock under stock-based compensation plans	159	181	189
Repurchases of common stock	(2,247)	(1,261)	(1,889)
Repayment of term loan borrowings and finance lease and earnout obligations	(28)	(91)	(95)
Net change in notes outstanding under the revolving credit facility	—	(75)	75
Proceeds from debt modification	—	25	—
Debt issuance costs	—	(4)	—
Dividends paid	(453)	(468)	(265)
Net cash (used in) financing activities	<u>(2,569)</u>	<u>(1,693)</u>	<u>(1,985)</u>
Effect of exchange rate changes on cash and cash equivalents	(34)	(36)	51
Increase (decrease) in cash and cash equivalents	1,484	(764)	(109)
Cash and cash equivalents, beginning of year	1,161	1,925	2,034
Cash and cash equivalents, end of period	<u>\$ 2,645</u>	<u>\$ 1,161</u>	<u>\$ 1,925</u>
Supplemental information:			
Cash paid for income taxes during the year	\$ 870	\$ 597	\$ 587
Cash interest paid during the year	\$ 25	\$ 21	\$ 21

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 services include digital services and solutions, consulting, application development, systems integration, application testing, application maintenance, infrastructure services and business process services. Digital services have become an increasingly important part of our portfolio, aligning with our clients’ focus on becoming data-enabled, customer-centric and differentiated businesses. We tailor our services and solutions to specific industries with an integrated global delivery model that employs client service and delivery teams based at client 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 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. We have reclassified certain prior period amounts to conform to current period presentation.

Cash and Cash Equivalents and Investments. Cash and cash equivalents consist of all cash balances, including money market funds, 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. 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. Held-to-maturity securities are reported at amortized cost. Interest and amortization of premiums and discounts for debt securities are included in interest income.

On a quarterly basis, we evaluate our 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 and 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 the fair value of the security is less than its cost basis and 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 asset. 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 6](#).

Leases. Our lease asset classes primarily consist of operating leases for office space, data centers and equipment. At inception of a contract, we determine whether a contract contains a lease, and if a lease is identified, whether it is an operating or finance

lease. In determining whether a contract contains a lease we consider whether (1) we have the right to obtain substantially all of the economic benefits from the use of the asset throughout the term of the contract, (2) we have the right to direct how and for what purpose the asset is used throughout the term of the contract and (3) we have the right to operate the asset throughout the term of the contract without the lessor having the right to change the terms of the contract. Some of our lease agreements contain both lease and non-lease components that we account for as a single lease component for all of our lease asset classes.

Our ROU lease assets represent our right to use an underlying asset for the lease term and may include any advance lease payments made and any initial direct costs, and exclude lease incentives. Our lease liabilities represent our obligation to make lease payments arising from the contractual terms of the lease. ROU lease assets and lease liabilities are recognized at the commencement of the lease and are calculated using the present value of lease payments over the lease term. Typically, our lease agreements do not provide sufficient detail to arrive at an implicit interest rate. Therefore, we use our estimated country-specific incremental borrowing rate based on information available at the commencement date of the lease to calculate the present value of the lease payments. In estimating our country-specific incremental borrowing rates, we consider market rates of comparable collateralized borrowings for similar terms. Our lease terms may include the option to extend or terminate the lease before the end of the contractual lease term. Our ROU lease assets and lease liabilities include these options when it is reasonably certain that they will be exercised.

A portion of our real estate lease costs is subject to annual changes in the CPI. The changes to the CPI are treated as variable lease payments and are recognized in the period in which the obligation for those payments is incurred. Other variable lease costs primarily relate to adjustments for common area maintenance, utilities and property tax. These variable costs are recognized in the period in which the obligation for those payments is incurred.

Prior to the adoption of the New Lease Standard on January 1, 2019, we were not required to recognize ROU lease assets and lease liabilities on our consolidated statement of financial position for operating leases. See [Note 7](#) for additional information on the impact of adoption of this standard.

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 clients, 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.

During the fourth quarter of 2019, the Company adjusted the allocation of the purchase price of certain prior period acquisitions that included revenue contracts with the sellers of the acquired businesses. As a result, we recorded a balance sheet adjustment to decrease total assets (primarily impacting intangible assets, goodwill and deferred income taxes) and total liabilities (primarily impacting deferred revenue) by approximately \$70 million each. The impact of the adjustment to our operating results was immaterial. Management concluded that the adjustment was not material to any previously issued consolidated financial statements or to the consolidated financial statements as of and for the year ended December 31, 2019.

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 (loss) 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 group 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 asset groups. The impairment loss is determined as the amount by which the carrying amount of the asset group exceeds its fair value. Intangible assets consist primarily of client 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 ASR agreements 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 clients 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 and when 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 the New Revenue Standard 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 Accounts Receivable, 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 from clients 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.

During the fourth quarter of 2019, we determined that it is preferable to change our accounting policy to net certain amounts due to customers, such as discounts and rebates, with trade accounts receivable, in order to better align with industry practice and better reflect amounts due from our customers on our consolidated statements of financial position. As a result, we netted \$99 million of amounts due to customers, which would have otherwise been included in the caption "Accrued expenses and other current liabilities", within the caption "Trade accounts receivable, net" in our consolidated statement of financial position as of December 31, 2019. We applied this change in accounting policy retrospectively and decreased "Trade accounts receivable, net" and "Accrued expenses and other current liabilities" by \$67 million as of December 31, 2018. The impact of the adjustment to our consolidated statements of financial position was immaterial for all periods presented and there was no impact to our operating results or cash flows.

Our contract assets and contract 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 contract liabilities primarily results from the timing difference between our performance obligations and the client's payment. We receive payments from clients 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 trade accounts receivables that may not be collected. The allowance is based upon an assessment of client 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.

Costs to Fulfill. Recurring operating costs for contracts with customers are recognized as incurred. Certain eligible, nonrecurring costs (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 in evaluating 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 entity's functional currency. The entity's functional currency is the currency of the primary economic environment in which it 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 entity at historical exchange rates while monetary assets and liabilities

are remeasured to the functional currency of the entity 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 primarily 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.

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. Basic EPS 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 2019, 2018 and 2017 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.	As a result of the adoption, we recorded an adjustment to opening retained earnings of approximately \$121 million.
February 2016 Leases	January 1, 2019 Effective Date Method	The new standard replaces the existing guidance on leases and requires the lessee to recognize a ROU asset and a lease liability for all leases with lease terms greater than twelve months. For finance leases, the lessee recognizes interest expense and amortization of the ROU asset, and for operating leases, the lessee recognizes 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 the effective date method, which is retrospective to the beginning of the period of adoption through a cumulative-effect adjustment.	See Note 7 for the impact of adoption of this standard.
March 2017 Nonrefundable Fees and Other Costs	January 1, 2019 Modified Retrospective	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 are 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.	The adoption of this update did not have an impact on our consolidated financial statements.
August 2018 Customer's Accounting for Implementation Costs Incurred in a CCA that is a Service Contract	Early adoption on January 1, 2019 Prospective	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. In addition, this update clarifies the financial statement presentation requirement for capitalized implementation costs and related amortization of such costs.	The adoption of this update did not have an impact on our consolidated financial statements.

New Accounting Pronouncement

Date Issued and Topic	Effective Date	Description	Impact
June 2016 Financial Instruments-Credit Losses	January 1, 2020	The new standard requires the measurement and recognition of expected credit losses using the current expected credit loss model for financial assets held at amortized cost, which includes the Company's trade accounts receivable, certain financial instruments and contract assets. It replaces the existing incurred loss impairment model with an expected loss methodology. The recorded credit losses are adjusted each period for changes in expected lifetime credit losses. The standard requires a cumulative effect adjustment to the statement of financial position as of the beginning of the first reporting period in which the guidance is effective.	We do not expect the adoption of this update to have a material impact on our financial statements.

Note 2 — Revenues

Disaggregation of Revenues

The tables below present disaggregated revenues from contracts with clients by client 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. Our consulting and technology services include consulting, application development, systems integration, and application testing services as well as software solutions and related services while our outsourcing services include application maintenance, infrastructure and business process services. Revenues are attributed to geographic regions based upon client location. Substantially all of the revenue in our North America region relates to operations in the United States.

	Year Ended				
	December 31, 2019				
	Financial Services	Healthcare	Products and Resources	Communications, Media and Technology	Total
	(in millions)				
Revenues					
Geography:					
North America	\$ 4,137	\$ 4,147	\$ 2,678	\$ 1,764	\$ 12,726
United Kingdom	484	130	380	319	1,313
Continental Europe	728	341	453	169	1,691
Europe - Total	1,212	471	833	488	3,004
Rest of World	520	77	259	197	1,053
Total	\$ 5,869	\$ 4,695	\$ 3,770	\$ 2,449	\$ 16,783
Service line:					
Consulting and technology services	\$ 3,782	\$ 2,564	\$ 2,295	\$ 1,305	\$ 9,946
Outsourcing services	2,087	2,131	1,475	1,144	6,837
Total	\$ 5,869	\$ 4,695	\$ 3,770	\$ 2,449	\$ 16,783
Type of contract:					
Time and materials	\$ 3,651	\$ 1,845	\$ 1,632	\$ 1,528	\$ 8,656
Fixed-price	1,922	1,635	1,730	803	6,090
Transaction or volume-based	296	1,215	408	118	2,037
Total	\$ 5,869	\$ 4,695	\$ 3,770	\$ 2,449	\$ 16,783

	Year Ended				
	December 31, 2018				
	Financial Services	Healthcare	Products and Resources	Communications, Media and Technology	Total
(in millions)					
Revenues ⁽¹⁾					
Geography:					
North America	\$ 4,162	\$ 4,254	\$ 2,397	\$ 1,480	\$ 12,293
United Kingdom	481	91	358	344	1,274
Continental 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	\$ 5,845	\$ 4,668	\$ 3,415	\$ 2,197	\$ 16,125
Service line:					
Consulting and technology services	\$ 3,571	\$ 2,553	\$ 2,024	\$ 1,161	\$ 9,309
Outsourcing services	2,274	2,115	1,391	1,036	6,816
Total	\$ 5,845	\$ 4,668	\$ 3,415	\$ 2,197	\$ 16,125
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	\$ 5,845	\$ 4,668	\$ 3,415	\$ 2,197	\$ 16,125

(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 historical accounting policies.

Costs to Fulfill

The following table presents information related to the capitalized costs to fulfill, such as setup or transition activities. 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 statement of operations. Costs to obtain contracts were immaterial for the period disclosed.

	2019		2018	
	(in millions)			
Beginning balance	\$	400	\$	303
Costs capitalized		189		167
Amortization expense		(79)		(70)
Impairment charge		(25)		—
Ending balance	\$	485	\$	400

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:

	2019	2018
	(in millions)	
Beginning balance	\$ 305	\$ 306
Revenues recognized during the period but not billed	313	285
Amounts reclassified to trade accounts receivable	(284)	(286)
Ending balance	\$ 334	\$ 305

Our contract liabilities, or deferred revenue, consist of advance payments and billings in excess of revenues recognized. The table below shows significant movements in the deferred revenue balances (current and noncurrent):

	2019	2018
	(in millions)	
Beginning balance	\$ 348	\$ 431
Amounts billed but not recognized as revenues	319	204
Revenues recognized related to the opening balance of deferred revenue	(261)	(287)
Other ⁽¹⁾	(70)	—
Ending balance	\$ 336	\$ 348

(1) See the *Business Combinations* section in [Note 1](#).

Revenues recognized during the year ended December 31, 2019 for performance obligations satisfied or partially satisfied in previous periods were immaterial.

Remaining Performance Obligations

As of December 31, 2019, the aggregate amount of transaction price allocated to remaining performance obligations, was \$1,647 million, of which approximately 70% 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 the New Revenue Standard,
- (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.

Note 3 — Business Combinations

All acquisitions completed during the three years ended December 31, 2019, 2018 and 2017 were not individually or in the aggregate 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.

2019

In 2019, we acquired 100% ownership in the following:

- Mustache, a creative content agency based in the United States, that extends our capabilities in creating original and branded content for digital, broadcast and social mediums (acquired on January 15, 2019).
- Meritsoft, a financial software company based in Ireland, that complements our service offerings to capital markets institutions (acquired on March 4, 2019).
- Samlink, a developer of services and solutions for the financial sector based in Finland, that strengthens our banking capabilities and brings with it a strategic partnership with three Finnish financial institutions to transform and operate a shared core banking platform (acquired on April 1, 2019).
- Zenith, a life sciences company based in Ireland, that extends our service capabilities for connected biopharmaceutical and medical device manufacturers (acquired on July 29, 2019).
- Contino, a technology consulting firm that extends our capabilities in enterprise DevOps and cloud transformation (acquired on October 31, 2019).

The allocations of preliminary purchase price to the fair value of the aggregate assets acquired and liabilities assumed were as follows:

	Contino	Meritsoft	Zenith	Others	Total	Weighted Average Useful Life
	(dollars in millions)					
Cash	\$ 7	\$ 14	\$ 9	\$ 15	\$ 45	
Current assets	16	6	52	21	95	
Property, plant and equipment and other noncurrent assets	4	1	6	14	25	
Non-deductible goodwill	198	147	76	21	442	
Customer relationship intangible assets	29	46	73	19	167	10.7 years
Other intangible assets	2	29	4	6	41	6.1 years
Current liabilities	(11)	(3)	(35)	(22)	(71)	
Noncurrent liabilities	(10)	(12)	(17)	(10)	(49)	
Purchase price, inclusive of contingent consideration	<u>\$ 235</u>	<u>\$ 228</u>	<u>\$ 168</u>	<u>\$ 64</u>	<u>\$ 695</u>	

For acquisitions completed in 2019, 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.

2018

In 2018, we completed the following five business combinations:

- 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 clients 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.
- 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>	

2017

In 2017, we completed the following five business combinations:

- Brilliant, an intelligent products and solutions company based in Japan specializing in digital strategy, product design and engineering, the IoT, and enterprise mobility that expands our digital transformation portfolio and capabilities.
- Top Tier, a U.S. healthcare management consulting firm that strengthens our consulting service offerings within the healthcare consulting market.
- TMG, a leading national provider of business process services to the U.S. government healthcare market that further strengthens our business process-a-service solutions for government and public health programs.
- Netcentric, 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.
- Zone, 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	Weighted Average Useful Life
(in millions)		
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>	

Note 4 — Restructuring Charges

In 2017, we began a realignment program with the objective of improving our client focus, our cost structure and the efficiency and effectiveness of our delivery while continuing to drive revenue growth. As part of the realignment program, we incurred Executive Transition Costs, employee separation costs, employee retention costs and third party realignment costs. Our third party realignment costs include professional fees related to the development of our realignment program and facility exit costs.

Over the next two years, we intend to implement our 2020 Fit for Growth Plan, which is expected to involve significant investments in technology, sales and marketing, talent re-skilling, acquisitions and partnerships to further sharpen our strategic positioning in key digital areas as well as our strategic decision to exit certain content-related services. The 2020 Fit for Growth Plan involves certain measures, which commenced in the fourth quarter of 2019, to optimize our cost structure in order to partially fund these investments and advance our growth agenda.

The total costs related to our realignment program and our 2020 Fit for Growth Plan are reported in "Restructuring charges" in our consolidated statements of operations. We do not allocate these charges to individual segments in internal management reports used by the chief operating decision maker. Accordingly, such expenses are separately disclosed in our segment reporting as "unallocated costs". See [Note 19](#).

Charges related to our realignment program and our 2020 Fit for Growth Plan were as follows:

	Years Ended December 31,		
	2019	2018	2017
	(in millions)		
Realignment Program:			
Employee separation costs	\$ 64	\$ 18	\$ 53
Executive Transition Costs	22	—	—
Employee retention costs	45	—	—
Third party realignment costs	38	1	19
2020 Fit for Growth Plan:			
Employee separation costs	45	—	—
Employee retention costs	2	—	—
Facility exit costs	1	—	—
Total restructuring charges	<u>\$ 217</u>	<u>\$ 19</u>	<u>\$ 72</u>

The 2020 Fit for Growth Plan charges include \$5 million of costs incurred in 2019 related to our exit from certain content-related services.

Changes in our accrued employee separation costs, for both our realignment program and our 2020 Fit for Growth Plan, included in "Accrued expenses and other current liabilities" in our consolidated statement of financial position, are presented in the table below.

	(in millions)	
Balance - December 31, 2018	\$	—
Employee separation costs accrued		109
Payments made		62
Balance - December 31, 2019	<u>\$</u>	<u>47</u>

The accrued employee separation costs as of December 31, 2017 were immaterial.

Note 5 — Investments

Our investments were as follows as of December 31:

	2019	2018
	(in millions)	
Short-term investments:		
Equity investment security	\$ 26	\$ 25
Available-for-sale investment securities	—	1,760
Held-to-maturity investment securities	287	1,065
Time deposits ⁽¹⁾	466	500
Total short-term investments	<u>\$ 779</u>	<u>\$ 3,350</u>
Long-term investments:		
Equity and cost method investments	\$ 17	\$ 74
Held-to-maturity investment securities	—	6
Total long-term investments	<u>\$ 17</u>	<u>\$ 80</u>

(1) Includes \$414 million and \$423 million in restricted time deposits as of December 31, 2019 and December 31, 2018, respectively. See [Note 11](#).

Equity Investment Security

Our equity investment security is a U.S. dollar denominated investment in a fixed income mutual fund. Realized and unrealized gains and losses were immaterial for the years ended December 31, 2019 and 2018.

Available-for-Sale Investment Securities

During 2019, all of our available-for-sale investment securities either matured or were sold. We determine the cost of the securities sold based on the specific identification method. 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:

	2019	2018	2017
	(in millions)		
Proceeds from sales of available-for-sale investment securities	\$ 1,712	\$ 1,285	\$ 2,922
Gross gains	\$ 6	\$ —	\$ 1
Gross losses	(5)	(4)	(3)
Net realized gains (losses) on sales of available-for-sale investment securities	<u>\$ 1</u>	<u>\$ (4)</u>	<u>\$ (2)</u>

The amortized cost, gross unrealized gains and losses and fair value of available-for-sale investment securities at December 31, 2018 were as follows:

	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>

The fair value and related unrealized losses of 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>

The unrealized losses for the above securities as of December 31, 2018 were primarily attributable to changes in interest rates. The gross unrealized gains and losses in the above tables were recorded, net of tax, in "Accumulated other comprehensive income (loss)" in our consolidated statement of financial position.

Held-to-Maturity Investment Securities

Our held-to-maturity investment securities consist of Indian rupee denominated investments primarily in commercial paper and international corporate bonds. 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 basis for the measurement of fair value of our held-to-maturity investments is Level 2 in the fair value hierarchy.

The amortized cost, gross unrealized gains and losses and fair value of held-to-maturity investment securities at December 31, 2019 were as follows:

	Amortized Cost	Unrealized Gains	Unrealized Losses	Fair Value
(in millions)				
Short-term investments, due within one year:				
Corporate and other debt securities	\$ 101	\$ —	\$ —	\$ 101
Commercial paper	186	—	—	186
Total short-term held-to-maturity investments	<u>\$ 287</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 287</u>

The amortized cost, gross unrealized gains and losses and fair value of held-to-maturity investment securities at December 31, 2018 were as follows:

	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>

[Table of Contents](#)

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, 2019:

	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	\$ 42	\$ —	\$ —	\$ —	\$ 42	\$ —
Commercial Paper	70	—	—	—	70	—
Total	\$ 112	\$ —	\$ —	\$ —	\$ 112	\$ —

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	\$ 531	\$ (1)	\$ 57	\$ —	\$ 588	\$ (1)

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, 2019.

During the years ended December 31, 2019 and 2018, 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, 2019 and 2018, we had equity method investments of \$9 million and \$66 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. Our investments are assessed for impairment whenever factors indicate an other-than-temporary decline in carrying value has occurred. As a result of recent events indicating one of our investments experienced an other-than-temporary impairment, we assessed its fair value and determined that the carrying value exceeded the fair value. As such, we recorded an impairment charge of \$57 million in the fourth quarter of 2019 within the caption "Income (loss) from equity method investments" in our consolidated statement of operations. In determining the fair value of the equity method investment we considered results from the following valuation methodologies: income approach, based on discounted future cash flows, market approach, based on current market multiples and net asset value approach, based on the assets and liabilities of the investee. The basis for the measurement of fair value for this equity method investment is Level 3 in the fair value hierarchy.

As of December 31, 2019 and 2018, we had cost method investments of \$8 million.

Note 6 — Property and Equipment, net

Property and equipment were as follows as of December 31:

	<u>Estimated Useful Life (Years)</u>	<u>2019</u>	<u>2018</u>
		(in millions)	
Buildings	30	\$ 790	\$ 839
Computer equipment	3 – 5	516	412
Computer software	3 – 8	820	721
Furniture and equipment	5 – 9	702	639
Land		11	19
Leasehold land	lease term	—	60
Capital work-in-progress		133	156
Leasehold improvements	Shorter of the lease term or the life of the asset	379	338
Sub-total		3,351	3,184
Accumulated depreciation and amortization		(2,042)	(1,790)
Property and equipment, net		<u>\$ 1,309</u>	<u>\$ 1,394</u>

Depreciation and amortization expense related to property and equipment was \$363 million, \$347 million and \$313 million for the years ended December 31, 2019, 2018 and 2017, respectively.

The gross amount of property and equipment recorded under finance leases was \$30 million as of December 31, 2019. The gross amount of property and equipment recorded under capital leases was \$73 million as of December 31, 2018. In 2019, as a result of the adoption of the New Lease Standard, we reclassified leasehold land and a built-to-suit building lease asset from "Property and equipment, net" to "Operating lease assets, net". See [Note 7](#) for additional information. Accumulated amortization and amortization expense for our finance lease assets was \$14 million as of December 31, 2019 and \$11 million for the year ended December 31, 2019, respectively. Accumulated amortization and amortization expense related to our capital lease assets were immaterial as of and for the years ended December 31, 2018 and 2017.

The gross amount of property and equipment recorded for software to be sold, leased or marketed reported in the caption "Computer software" above was \$129 million and \$85 million, as of December 31, 2019 and 2018, respectively. Accumulated amortization for software to be sold, leased or marketed was \$46 million and \$24 million as of December 31, 2019 and 2018, respectively. Amortization expense for software to be sold, leased or marketed recorded as property and equipment was \$22 million and \$14 million for the years ended December 31, 2019 and 2018 respectively, and was immaterial for the year ended December 31, 2017.

Note 7 — Leases**Adoption of the New Lease Standard**

On January 1, 2019, we adopted the New Lease Standard using the effective date method applied to all lease contracts existing as of January 1, 2019. Under the effective date method, results for reporting periods beginning on or after January 1, 2019 are presented under the New Lease Standard. We elected the package of practical expedients that permits us to not reassess prior conclusions related to contracts containing leases, lease classification and initial direct costs. Prior period amounts are not adjusted and continue to be reported in accordance with our historical accounting policies.

The impact of adoption primarily relates to the recognition of ROU operating lease assets and operating lease liabilities on our consolidated statement of financial position for all operating leases with a term greater than twelve months. The accounting for our finance leases remained substantially unchanged. The following table provides the impact of adoption of the New Lease Standard on our consolidated statement of financial position as of January 1, 2019:

Location on Statement of Financial Position	January 1, 2019 (in millions)
Property and equipment, net ⁽¹⁾	\$ (81)
Operating lease assets, net ^{(1) (2) (3)}	839
Total assets	<u>\$ 758</u>
Operating lease liabilities ^{(2) (3)}	\$ 191
Operating lease liabilities, noncurrent ^{(2) (3)}	670
Accrued expenses and other liabilities ⁽³⁾	(10)
Other noncurrent liabilities ⁽³⁾	(95)
Total liabilities	<u>\$ 756</u>
Retained earnings ⁽⁴⁾	<u>\$ 2</u>

- (1) Reflects the reclassification of leasehold land and a built-to-suit lease asset from "Property and equipment, net" to "Operating lease assets, net".
- (2) Represents the recognition of operating lease assets and liabilities (current and noncurrent), as defined by the New Lease Standard, including the liability for a built-to-suit lease that was previously accounted for as a capital lease under the former lease guidance.
- (3) Represents the reclassification of deferred rent from "Accrued expenses and other liabilities" and "Other noncurrent liabilities" to "Operating lease assets, net" and the reclassification of built-to-suit lease liabilities from "Accrued expenses and other liabilities" and "Other noncurrent liabilities" to "Operating lease liabilities" and "Operating lease liabilities, noncurrent".
- (4) Represents the net impact of the derecognition of a built-to-suit lease under the former lease guidance and the re-establishment of that lease as an operating lease under the New Lease Standard.

The adoption of the New Lease Standard did not materially impact our consolidated statement of operations or our consolidated statement of cash flows.

The following table provides information on the components of our operating and finance leases included in our consolidated statement of financial position:

Leases	Location on Statement of Financial Position	December 31, 2019 (in millions)
Assets		
ROU operating lease assets	Operating lease assets, net	\$ 926
ROU finance lease assets	Property and equipment, net	16
	Total	<u>\$ 942</u>
Liabilities		
Current		
Operating lease	Operating lease liabilities	\$ 202
Finance lease	Accrued expenses and other current liabilities	11
Noncurrent		
Operating lease	Operating lease liabilities, noncurrent	745
Finance lease	Other noncurrent liabilities	15
	Total	<u>\$ 973</u>

Our operating lease cost was \$264 million for the year ended December 31, 2019 and included \$18 million of variable lease cost. Our short term lease rental expense was \$16 million for the year ended December 31, 2019. Lease interest expense related to our finance leases for year ended December 31, 2019 was immaterial.

[Table of Contents](#)

The following table provides information on the weighted average remaining lease term and weighted average discount rate for our operating leases:

Operating Lease Term and Discount Rate	December 31, 2019
Weighted average remaining lease term	6.0 years
Weighted-average discount rate	6.0%

The following table provides supplemental cash flow information related to our operating leases:

	2019
	(in millions)
Cash paid for amounts included in the measurement of operating lease liabilities	\$ 232
ROU assets obtained in exchange for operating lease liabilities	274

Cash paid for amounts included in the measurement of finance lease liabilities and ROU assets obtained in exchange for finance lease liabilities were each immaterial for the year ended December 31, 2019.

The following table provides the schedule of maturities of our operating lease liabilities, under the New Lease Standard, as of December 31, 2019:

	Operating lease obligations
	(in millions)
2020	249
2021	217
2022	167
2023	132
2024	96
Thereafter	273
Total lease payments	1,134
Interest	(187)
Total lease liabilities	\$ 947

The following table provides the schedule of our future minimum payments on our operating leases, as of December 31, 2018, which were accounted for in accordance with our historical accounting policies.

	Operating lease obligations
	(in millions)
2019	\$ 226
2020	197
2021	157
2022	121
2023	90
Thereafter	197
Total minimum lease payments	\$ 988

As of December 31, 2019, we had \$316 million of additional obligations related to operating leases whose lease term had yet to commence and which are therefore not included in our statement of financial position. These leases are primarily related to real estate and will commence in various months in 2020 and 2021 with lease terms of 1 year to 11 years.

Note 8 — Goodwill and Intangible Assets, net

Changes in goodwill by our reportable segments were as follows for the years ended December 31, 2019 and 2018:

Segment	January 1, 2019	Goodwill Additions and Adjustments	Foreign Currency Translation Adjustments	Other ⁽¹⁾	December 31, 2019
Financial Services	\$ 411	\$ 288	\$ (2)	\$ 3	\$ 700
Healthcare	2,469	86	—	40	2,595
Products and Resources	384	18	1	14	417
Communications, Media and Technology	217	49	1	—	267
Total goodwill	<u>\$ 3,481</u>	<u>\$ 441</u>	<u>\$ —</u>	<u>\$ 57</u>	<u>\$ 3,979</u>

(1) See the *Business Combinations* section in [Note 1](#).

Segment	January 1, 2018	Goodwill Additions and Adjustments	Foreign Currency Translation Adjustments	December 31, 2018
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>

Based on our most recent goodwill impairment assessment performed as of October 31, 2019, we concluded that the goodwill in each of our reporting units was not at risk of impairment. We have not recognized any impairment losses on our goodwill.

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

	2019			2018		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	(in millions)					
Customer relationships	\$ 1,181	\$ (390)	\$ 791	\$ 1,277	\$ (398)	\$ 879
Developed technology	388	(239)	149	355	(187)	168
Indefinite life trademarks	72	—	72	72	—	72
Other	71	(42)	29	64	(33)	31
Total intangible assets	<u>\$ 1,712</u>	<u>\$ (671)</u>	<u>\$ 1,041</u>	<u>\$ 1,768</u>	<u>\$ (618)</u>	<u>\$ 1,150</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 \$162 million for 2019, \$151 million for 2018 and \$130 million for 2017.

The following table provides the estimated amortization expense related to our existing intangible assets for the next five years.

Estimated Amortization	
(in millions)	
2020	\$ 144
2021	140
2022	132
2023	90
2024	83

Note 9 — Accrued Expenses and Other Current Liabilities

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

	2019	2018
	(in millions)	
Compensation and benefits	\$ 1,239	\$ 1,216
Customer volume and other incentives ⁽¹⁾	251	256
Derivative financial instruments	8	25
FCPA Accrual ⁽²⁾	—	28
Income taxes	152	162
Professional fees	137	110
Travel and entertainment	24	34
Other	380	369
Total accrued expenses and other current liabilities	\$ 2,191	\$ 2,200

(1) See the *Trade Accounts Receivable, Contract Assets and Contract Liabilities* section in [Note 1](#).

(2) Refer to [Note 15](#).

Note 10 — Debt

In 2018, we entered into a Credit Agreement providing for a \$750 million Term Loan and a \$1,750 million unsecured revolving credit facility, which are due to mature in November 2023. We are required under the Credit Agreement to make scheduled quarterly principal payments on the Term Loan.

The Credit Agreement requires interest to be paid, at our option, at either the ABR or the Eurocurrency Rate (each as defined in the Credit Agreement), plus, in each case, an Applicable Margin (as defined in the 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 Credit Agreement). Under the 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 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, 2019 and 2018.

The 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, which is the ratio of indebtedness for borrowed money to Consolidated EBITDA, as defined in the Credit Agreement, 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 Credit Agreement as of December 31, 2019.

In 2019, our India subsidiary entered into a 13 billion Indian rupee (\$182 million at the December 31, 2019 exchange rate) working capital facility, which requires us to repay any balances within 90 days from the date of disbursement.

Short-term Debt

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

	2019		2018	
	Amount	Weighted Average Interest Rate	Amount	Weighted Average Interest Rate
	(in millions)		(in millions)	
Term loan - current maturities	\$ 38	2.6%	\$ 9	3.3%

Long-term Debt

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

	2019	2018
	(in millions)	
Term loan	\$ 741	\$ 750
Less:		
Current maturities	(38)	(9)
Deferred financing costs	(3)	(5)
Long-term debt, net of current maturities	<u>\$ 700</u>	<u>\$ 736</u>

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

Year	Amounts
	(in millions)
2020	\$ 38
2021	38
2022	38
2023	627
	<u>\$ 741</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:

	2019	2018	2017
	(in millions)		
United States	\$ 931	\$ 947	\$ 810
Foreign	1,612	1,850	1,845
Income before provision for income taxes	<u>\$ 2,543</u>	<u>\$ 2,797</u>	<u>\$ 2,655</u>

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

	2019	2018	2017
	(in millions)		
Current:			
Federal and state	\$ 549	\$ 241	\$ 767
Foreign	400	449	262
Total current provision	<u>949</u>	<u>690</u>	<u>1,029</u>
Deferred:			
Federal and state	(320)	1	102
Foreign	14	7	22
Total deferred (benefit) provision	<u>(306)</u>	<u>8</u>	<u>124</u>
Total provision for income taxes	<u>\$ 643</u>	<u>\$ 698</u>	<u>\$ 1,153</u>

We are involved in an ongoing dispute with the ITD in connection with a previously disclosed 2016 share repurchase transaction undertaken by CTS India to repurchase shares from its shareholders (non-Indian Cognizant entities) valued at \$2.8 billion. As a result of that transaction, which was undertaken pursuant to a plan approved by the Court in Chennai, India, we previously paid \$135 million in Indian income taxes - an amount we believe includes all the applicable taxes owed for this transaction under Indian law. In March 2018, we received a communication from the ITD asserting that the ITD is owed an additional 33 billion Indian rupees (\$463 million at the December 31, 2019 exchange rate) on the 2016 transaction. Immediately thereafter, the ITD placed an attachment on certain of our India bank accounts. In addition to the dispute on the 2016 transaction, we are also 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").

In April 2018, the Court admitted our writ petition for a stay of the actions of the ITD and lifted the ITD’s attachment on our bank accounts. As part of the interim stay order, we deposited 5 billion Indian rupees (\$70 million at the December 31, 2019 exchange rate and \$71 million at the December 31, 2018 exchange rate) representing 15% of the disputed tax amount related to the 2016 transaction, with the ITD. These amounts are presented in "Other current assets" in our consolidated statements of financial position. In addition, the Court also placed a lien on certain time deposits of CTS India in the amount of 28 billion Indian rupees (\$393 million at the December 31, 2019 exchange rate and \$404 million at the December 31, 2018 exchange rate), which is the remainder of the disputed tax amount related to the 2016 transaction. The affected time deposits are considered restricted assets and we have reported them in “Short-term investments” in our consolidated statements of financial position. As of December 31, 2019 and 2018, the restricted time deposits balance was \$414 million and \$423 million, respectively, including a portion of the interest previously earned on such deposits.

In June 2019, the Court dismissed our previously admitted writ petitions on the ITD Dispute, holding that the Company must exhaust other remedies, such as pursuing the matter before other appellate bodies, for resolution of the ITD Dispute prior to intervention by the Court. The Court did not issue a ruling on the substantive issue of whether we owe additional tax as a result of either the 2016 or the 2013 transaction. In July 2019, we appealed the Court’s orders before the Division Bench. In September 2019, the Division Bench partly allowed the Company’s appeal, but did not issue a ruling on the substantive issue of the tax implications of the transactions. In October 2019, we filed a SLP before the Supreme Court of India. The Supreme Court has scheduled the next hearing on the SLP at the end of February 2020 and has instructed the ITD to maintain status quo until a ruling is issued.

We believe we have paid all applicable taxes owed on both the 2016 and the 2013 transactions. Accordingly, we have not recorded any reserves for these matters as of December 31, 2019.

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>2019</u>	<u>%</u>	<u>2018</u>	<u>%</u>	<u>2017</u>	<u>%</u>
(Dollars in millions)						
Tax expense, at U.S. federal statutory rate	\$ 534	21.0	\$ 587	21.0	\$ 929	35.0
State and local income taxes, net of federal benefit	59	2.3	56	2.0	39	1.5
Non-taxable income for Indian tax purposes	(90)	(3.5)	(146)	(5.2)	(216)	(8.2)
Rate differential on foreign earnings	145	5.7	206	7.4	(76)	(2.9)
Net impact related to the implementation of the Tax Reform Act	—	0.0	(5)	(0.2)	617	23.2
Net impact related to the India Tax Law	21	0.8	—	—	—	—
Recognition of previously unrecognized income tax benefits related to uncertain tax positions	—	0.0	(12)	(0.4)	(73)	(2.7)
Credits and other incentives	(57)	(2.2)	(19)	(0.7)	(37)	(1.4)
Other	31	1.2	31	1.1	(30)	(1.1)
Total provision for income taxes	<u>\$ 643</u>	<u>25.3</u>	<u>\$ 698</u>	<u>25.0</u>	<u>\$ 1,153</u>	<u>43.4</u>

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:

	2019	2018
	(in millions)	
Deferred income tax assets:		
Net operating losses	\$ 27	\$ 13
Revenue recognition	39	51
Compensation and benefits	171	150
MAT and credit carryforwards	307	340
Expenses not currently deductible	352	60
	896	614
Less: valuation allowance	(24)	(11)
Deferred income tax assets, net	872	603
Deferred income tax liabilities:		
Depreciation and amortization	187	256
Deferred costs	110	79
Other	25	9
Deferred income tax liabilities	322	344
Net deferred income tax assets	\$ 550	\$ 259

At December 31, 2019, we had foreign and U.S. net operating loss carryforwards of approximately \$39 million and \$80 million, respectively. We have recorded valuation allowances on certain net operating loss carryforwards. As of December 31, 2019 and 2018, deferred income tax assets related to the MAT carryforwards were \$176 million and \$228 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 carryforwards expire between March 2024 and March 2032 and we expect to fully utilize them within the applicable expiration periods of 15 years.

Our Indian subsidiaries are primarily export-oriented and are eligible for certain income tax holiday benefits granted by the government of India for export activities conducted within 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 2028 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 34.94%. In addition, all Indian profits, including those generated within SEZs, are subject to the MAT. The current rate of MAT for the India fiscal years starting on or after April 1, 2019 is 17.47%. For the years ended December 31, 2019, 2018 and 2017, 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 \$90 million, \$146 million and \$217 million, respectively, and increase diluted EPS by \$0.16, \$0.25 and \$0.36, respectively.

In December 2019, the Government of India enacted the India Tax Law effective retroactively to April 1, 2019 that enables Indian companies to elect to be taxed at a lower income tax rate of 25.17%, as compared to the current income tax rate of 34.94%. Once a company elects into the lower income tax rate, a company may not benefit from any tax holidays associated with SEZs and certain other tax incentives, including MAT carryforwards, and may not reverse its election.

Our current intent is to elect into the new tax regime once our MAT carryforwards are fully or substantially utilized. While our existing MAT carryforwards expire between March 2024 and March 2032, we expect to fully or substantially utilize our existing MAT carryforwards in or after the India financial year starting April 1, 2022. Our intent is based on a number of assumptions and financial projections. An election into the new tax law regime prior to utilization of our MAT carryforwards will result in a write-off of any remaining deferred income tax assets relating to the MAT carryforwards. As a result of the enactment of the India Tax Law, we recorded a one-time net income tax expense of \$21 million due to the revaluation to the lower income tax rate of our India net deferred income tax assets that are expected to reverse after we elect into the new tax regime.

We consider our earnings in India to be indefinitely reinvested, which is consistent with our ongoing strategy to expand our Indian operations, including through infrastructure investments. As of December 31, 2019, the amount of unrepatriated Indian earnings was approximately \$5,242 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 \$1,101 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 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 applications for APAs before the taxing authorities in some of our most significant jurisdictions.

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:

	2019	2018	2017
	(in millions)		
Balance, beginning of year	\$ 117	\$ 97	\$ 151
Additions based on tax positions related to the current year	22	8	17
Additions for tax positions of prior years	14	19	2
Additions for tax positions of acquired subsidiaries	—	6	—
Reductions for tax positions due to lapse of statutes of limitations	—	(12)	(41)
Reductions for tax positions of prior years	(1)	—	(32)
Settlements	—	—	—
Foreign currency exchange movement	—	(1)	—
Balance, end of year	<u>\$ 152</u>	<u>\$ 117</u>	<u>\$ 97</u>

At December 31, 2019, 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, 2019 and 2018 was approximately \$16 million and \$11 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 2019, 2018 and 2017 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 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	2019		2018	
		Assets	Liabilities	Assets	Liabilities
(in millions)					
Foreign exchange forward contracts - Designated as cash flow hedging instruments	Other current assets	\$ 32	\$ —	\$ 11	\$ —
	Other noncurrent assets	8	—	15	—
	Accrued expenses and other current liabilities	—	7	—	21
	Other noncurrent liabilities	—	2	—	9
	Total	40	9	26	30
Foreign exchange forward contracts - Not designated as cash flow hedging instruments	Other current assets	3	—	1	—
	Accrued expenses and other current liabilities	—	1	—	4
	Total	3	1	1	4
Total		\$ 43	\$ 10	\$ 27	\$ 34

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 2020 and 2021. 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, 2019, we estimate that \$21 million, net of tax, of the net gains 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 gains and 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:

	2019		2018	
	(in millions)			
2019	\$	—	\$	1,388
2020		1,505		780
2021		883		—
Total notional value of contracts outstanding	\$	2,388	\$	2,168
Net unrealized gains (losses) included in accumulated other comprehensive income (loss), net of taxes	\$	26	\$	(3)

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.

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)	
	2019	2018		2019	2018
	(in millions)				
Foreign exchange forward contracts - Designated as cash flow hedging instruments	\$ 39	\$ (87)	Cost of revenues	\$ 3	\$ 61
			Selling, general and administrative expenses	1	10
			Total	\$ 4	\$ 71

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 Indian rupee, British pound and Euro. We entered into a series of foreign exchange forward contracts that are scheduled to mature in 2020. 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:

	2019		2018	
	Notional	Market Value	Notional	Market Value
	(in millions)			
Contracts outstanding	\$ 702	\$ 2	\$ 507	\$ (3)

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

	Location of Net Gains on Derivative Instruments	Amount of Net Gains on Derivative Instruments	
		2019	2018
		(in millions)	
Foreign exchange forward contracts - Not designated as hedging instruments	Foreign currency exchange gains (losses), net	\$ 8	\$ 31

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, certain investments, contingent consideration liabilities 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, 2019:

	Level 1	Level 2	Level 3	Total
(in millions)				
Cash equivalents:				
Money market funds	\$ 1,646	\$ —	\$ —	\$ 1,646
Short-term investments:				
Time deposits ⁽¹⁾	—	466	—	466
Equity investment security	26	—	—	26
Other current assets				
Foreign exchange forward contracts	—	35	—	35
Other noncurrent assets				
Foreign exchange forward contracts	—	8	—	8
Accrued expenses and other current liabilities:				
Foreign exchange forward contracts	—	(8)	—	(8)
Contingent consideration liabilities	—	—	(8)	(8)
Other noncurrent liabilities				
Foreign exchange forward contracts	—	(2)	—	(2)
Contingent consideration liabilities	—	—	(30)	(30)

(1) Includes \$414 million in restricted time deposits. See [Note 11](#).

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
Short-term investments:				
Time deposits ⁽¹⁾	—	500	—	500
Equity investment security	25	—	—	25
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
Other current assets:				
Foreign exchange forward contracts	—	12	—	12
Other noncurrent assets:				
Foreign exchange forward contracts	—	15	—	15
Accrued expenses and other current liabilities:				
Foreign exchange forward contracts	—	(25)	—	(25)
Other noncurrent liabilities:				
Foreign exchange forward contracts	—	(9)	—	(9)

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

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 our equity security invested in an open-ended mutual fund is based on the published daily net asset value at which investors can freely subscribe to or redeem from the fund. 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, 2019 and 2018.

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.

We estimate the fair value of our contingent consideration liabilities associated with our acquisitions utilizing one or more significant inputs that are unobservable. We calculate the fair value of the contingent consideration liabilities based on the probability-weighted expected performance of the acquired entity against the target performance metric, discounted to present value when appropriate. Contingent consideration liabilities were immaterial as of December 31, 2018.

During the years ended December 31, 2019, 2018 and 2017, there were no transfers among Level 1, Level 2 or Level 3 financial assets and liabilities.

Note 14 — Accumulated Other Comprehensive Income (Loss)

Changes in "Accumulated other comprehensive income (loss)" by component were as follows for the year ended December 31, 2019:

	2019		
	Before Tax Amount	Tax Effect	Net of Tax Amount
(in millions)			
Foreign currency translation adjustments:			
Beginning balance	\$ (108)	\$ 5	\$ (103)
Change in foreign currency translation adjustments	45	(6)	39
Ending balance	<u>\$ (63)</u>	<u>\$ (1)</u>	<u>\$ (64)</u>
Unrealized (losses) on available-for-sale investment securities:			
Beginning balance	\$ (12)	\$ 4	\$ (8)
Net gains arising during the period	13	(4)	9
Reclassification of net gains to Other, net	(1)	—	(1)
Net change	<u>12</u>	<u>(4)</u>	<u>8</u>
Ending balance	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>
Unrealized (losses) gains on cash flow hedges:			
Beginning balance	\$ (4)	\$ 1	\$ (3)
Unrealized gains arising during the period	39	(7)	32
Reclassifications of net (gains) to:			
Cost of revenues	(3)	1	(2)
Selling, general and administrative expenses	(1)	—	(1)
Net change	<u>35</u>	<u>(6)</u>	<u>29</u>
Ending balance	<u>\$ 31</u>	<u>\$ (5)</u>	<u>\$ 26</u>
Accumulated other comprehensive income (loss):			
Beginning balance	\$ (124)	\$ 10	\$ (114)
Other comprehensive income (loss)	92	(16)	76
Ending balance	<u>\$ (32)</u>	<u>\$ (6)</u>	<u>\$ (38)</u>

Changes in "Accumulated other comprehensive income (loss)" by component were as follows for the years ended December 31, 2018 and 2017:

	2018			2017		
	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	\$ (38)	\$ —	\$ (38)	\$ (149)	\$ —	\$ (149)
Change in foreign currency translation adjustments	(70)	5	(65)	111	—	111
Ending balance	<u>\$ (108)</u>	<u>\$ 5</u>	<u>\$ (103)</u>	<u>\$ (38)</u>	<u>\$ —</u>	<u>\$ (38)</u>
Unrealized (losses) on available-for-sale investment securities:						
Beginning balance	\$ (11)	\$ 4	\$ (7)	\$ (6)	\$ 2	\$ (4)
Cumulative effect of change in accounting principle	—	(1)	(1)	—	—	—
Net unrealized (losses) arising during the period	(5)	2	(3)	(7)	3	(4)
Reclassification of net losses to Other, net	4	(1)	3	2	(1)	1
Net change	(1)	—	(1)	(5)	2	(3)
Ending balance	<u>\$ (12)</u>	<u>\$ 4</u>	<u>\$ (8)</u>	<u>\$ (11)</u>	<u>\$ 4</u>	<u>\$ (7)</u>
Unrealized gains (losses) on cash flow hedges:						
Beginning balance	\$ 154	\$ (39)	\$ 115	\$ 51	\$ (12)	\$ 39
Unrealized (losses) gains arising during the period	(87)	23	(64)	232	(57)	175
Reclassifications of net (gains) losses to:						
Cost of revenues	(61)	15	(46)	(109)	26	(83)
Selling, general and administrative expenses	(10)	2	(8)	(20)	4	(16)
Net change	(158)	40	(118)	103	(27)	76
Ending balance	<u>\$ (4)</u>	<u>\$ 1</u>	<u>\$ (3)</u>	<u>\$ 154</u>	<u>\$ (39)</u>	<u>\$ 115</u>
Accumulated other comprehensive income (loss):						
Beginning balance	\$ 105	\$ (35)	\$ 70	\$ (104)	\$ (10)	\$ (114)
Other comprehensive income (loss)	(229)	45	(184)	209	(25)	184
Ending balance	<u>\$ (124)</u>	<u>\$ 10</u>	<u>\$ (114)</u>	<u>\$ 105</u>	<u>\$ (35)</u>	<u>\$ 70</u>

Note 15 — Commitments and Contingencies

We are involved in various claims and legal proceedings 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. While we do not expect that the ultimate resolution of any existing claims and proceedings (other than the specific matters described below, if decided adversely), individually or in the aggregate, will have a material adverse effect on our financial position, an unfavorable outcome in some or all of these proceedings could have a material adverse impact on results of operations or cash flows for a particular period. This assessment is based on our current understanding of relevant facts and circumstances. As such, our view of these matters is subject to inherent uncertainties and may change in the future.

On February 28, 2019, a ruling of the Supreme Court of India interpreting the India Defined Contribution Obligation altered historical understandings of the obligation, extending it to cover additional portions of the employee's income. As a result, the ongoing contributions of our affected employees and the Company were required to be increased. In the first quarter of 2019, we accrued \$117 million with respect to prior periods, assuming retroactive application of the Supreme Court's ruling, in "Selling, general and administrative expenses" in our consolidated statements of operations. There is significant uncertainty as to how the liability should be calculated as it is impacted by multiple variables, including the period of assessment, the application with respect to certain current and former employees and whether interest and penalties may be assessed. Since the ruling, a variety of trade associations and industry groups have advocated to the Indian government, highlighting the harm to the information technology sector, other industries and job growth in India that would result from a retroactive application of the ruling. It is possible the Indian government will review the matter and there is a substantial question as to whether the Indian government will apply the Supreme Court's ruling on a retroactive basis. As such, the ultimate amount of our obligation may be materially different from the amount accrued.

In February 2019, we completed our previously disclosed 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. We also announced a resolution of the previously disclosed investigations by the United States DOJ and SEC into the matters that were the subject of our internal investigation. In connection with this resolution, in February 2019 we paid approximately \$28 million to the DOJ and SEC, an amount consistent with our December 31, 2018 accrual for this matter. The DOJ also issued a declination letter, declining to take any additional action against the Company.

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. These complaints were consolidated into a single action and on April 7, 2017, the lead plaintiffs filed a consolidated amended complaint on behalf of a putative class of persons and entities 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. 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 appeal petition to the Third Circuit. On October 29, 2018, we filed a petition for permission to appeal with the United States Court of Appeals for the Third Circuit. On March 6, 2019, the Third Circuit denied our petition without prejudice. In an order dated March 19, 2019, the District Court directed the lead plaintiffs to provide the defendants with a proposed amended complaint. On April 26, 2019, lead plaintiffs filed their second amended complaint. We filed a motion to dismiss the second amended complaint on June 10, 2019.

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. These actions were consolidated in an order dated January 24, 2017. 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, April 7, 2017 and May 10, 2017, three additional putative shareholder derivative complaints alleging similar claims were filed in the United States District Court for the District of New Jersey, naming us and certain of our current and former directors and officers as defendants. These complaints asserted claims similar to those in the previously-filed putative shareholder derivative actions. In an order dated June 20, 2017, the United States District Court for the District of New Jersey consolidated these actions 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, lead plaintiff filed a consolidated verified derivative complaint.

On March 11, 2019, a seventh putative shareholder derivative complaint was filed in the United States District Court for the District of New Jersey, naming us, certain of our current and former 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. On May 14, 2019, the Court approved a stipulation that (i) consolidated this action with the putative shareholder derivative suits that were previously filed in the United States District Court for the District of New Jersey; and (ii) stayed all of these suits pending a final, non-appealable order on the motion to dismiss the second amended complaint in the securities class action.

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 previously disclosed 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, 2019.

We have maintained directors and officers insurance and have recorded an insurance receivable of \$20 million as of December 31, 2019, reported in "Other current assets," related to the recovery of a portion of the indemnification expenses and costs related to the putative securities class action complaints. 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 clients' business and provide benefits that are difficult to quantify. Any failure in a client's systems or our failure to meet our contractual obligations to our clients, including any breach involving a client'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 position and cash flows for a particular period.

In the normal course of business and in conjunction with certain client engagements, we have entered into contractual arrangements through which we may be obligated to indemnify clients 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 client 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 material payments under these indemnification agreements and therefore they have not had a material 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 a material adverse effect on our business, results of operations, financial position and cash flows for a particular period.

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 \$117 million, \$108 million and \$91 million for the years ended December 31, 2019, 2018 and 2017, 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 eligible compensation, which is matched by an equal contribution by the Company. For these plans, we recognized a contribution expense of \$101 million, \$88 million and \$86 million for the years ended December 31, 2019, 2018

and 2017, respectively. On February 28, 2019, a ruling of the Supreme Court of India altered historical understandings of the obligation under these plans, extending them to cover additional portions of the employee's income. In the first quarter of 2019, we accrued \$117 million with respect to prior periods, assuming retroactive application of the Supreme Court's ruling, in "Selling, general and administrative expenses" in our consolidated statements of operations. See [Note 15](#) for further information.

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, 2019 and 2018, the amount accrued under the gratuity plan was \$135 million and \$141 million, which is net of fund assets of \$160 million and \$136 million, respectively. Expense recognized by us was \$38 million, \$53 million and \$40 million for the years ended December 31, 2019, 2018 and 2017, respectively.

Note 17 — Stock-Based Compensation Plans

The Company's 2017 Incentive Plan and the Purchase Plan provide for the issuance of up to 48.8 million (plus any shares underlying outstanding awards that are forfeited under the 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, 2019, we have 34.3 million and 8.9 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:

	2019	2018	2017
	(in millions)		
Cost of revenues	\$ 54	\$ 62	\$ 55
Selling, general and administrative expenses	163	205	166
Total stock-based compensation expense	<u>\$ 217</u>	<u>\$ 267</u>	<u>\$ 221</u>
Income tax benefit	<u>\$ 39</u>	<u>\$ 66</u>	<u>\$ 101</u>

Restricted Stock Units and Performance Stock Units

We granted RSUs that vest proportionately in quarterly or annual installments ranging from one year to four years to employees, including our executive officers. 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, 2019 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, 2019	5.0	\$ 69.64
Granted	3.0	64.12
Vested	(2.6)	67.43
Forfeited	(0.9)	70.11
Unvested at December 31, 2019	<u>4.5</u>	<u>\$ 67.07</u>

As of December 31, 2019, \$241 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 1.9 years.

The total vesting date fair value of vested RSUs was \$170 million, \$194 million and \$169 million for the years ended December 31, 2019, 2018 and 2017, respectively. The weighted-average grant date fair value of RSUs granted in 2019, 2018 and 2017 was \$64.12, \$74.94 and \$67.56, respectively.

We granted PSUs that vest over periods ranging from one year to four 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, 2019 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, 2019	3.3	\$ 71.59
Granted	2.1	70.77
Vested	(1.3)	60.05
Forfeited	(0.7)	75.35
Adjustment at the conclusion of the performance measurement period	(1.4)	81.77
Unvested at December 31, 2019	<u>2.0</u>	<u>\$ 69.73</u>

As of December 31, 2019, we have estimated that the minimum performance threshold will not be achieved for most outstanding PSU awards. Accordingly, the total remaining unrecognized stock-based compensation cost related to PSUs is immaterial.

The total vesting date fair value of vested PSUs was \$82 million, \$53 million and \$60 million for the years ended December 31, 2019, 2018 and 2017, respectively. The weighted-average grant date fair value of PSUs granted in 2019, 2018 and 2017 was \$70.77, \$81.98 and \$60.77, 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.

The Purchase Plan

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, 2019, 2018, and 2017 based upon the following assumptions and were as follows:

	2019	2018	2017
Dividend yield	1.3%	1.0%	1.0%
Weighted average volatility factor	24.9%	21.0%	24.3%
Weighted average expected life (in years)	0.25	0.25	0.25
Weighted average risk-free interest rate	2.2%	1.9%	0.9%
Weighted average grant date fair value	\$ 9.82	\$ 10.87	\$ 9.23

During the year ended December 31, 2019, we issued 2.8 million shares of Class A common stock under the Purchase Plan with a total fair value of approximately \$28 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. During the year ended December 31, 2017 Goodwin performed legal services for the Company for which it earned approximately \$4 million. The provision of legal services from Goodwin was reviewed and approved by our Audit Committee. During the years ended December 31, 2019 and 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 in 2019 and 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, logistics, energy, and utilities; and travel and hospitality 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 2019, we made certain changes to the internal measurement of segment operating profits for the purpose of evaluating segment performance and resource allocation. The primary reason for the change was to charge to our business segments costs that are directly managed and controlled by them. Specifically, segment operating profit now includes certain benefit, immigration, recruitment and sales and field marketing costs, which were previously included in "unallocated costs." We have reported our 2019 segment operating profits using the new allocation methodology and have restated the 2018 results to conform to the new methodology. Additionally, we combined our energy and utilities operating segment with our manufacturing and logistics operating segment for our internal reporting. Our products and resources segment, which was previously comprised of four operating segments ((i) retail and consumer goods; (ii) manufacturing and logistics; (iii) travel and hospitality; and (iv) energy and utilities) is now comprised of three operating segments ((i) retail and consumer goods; (ii) manufacturing, logistics, energy and utilities; and (iii) travel and hospitality). This change reflects how this operating segment is currently managed and reported to chief operating decision makers but will not affect our reportable segment financial results.

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, the excess or shortfall of incentive compensation for commercial and 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. The incremental accrual related to the India Defined Contribution Obligation recorded in 2019 has been excluded from segment operating profits for the year ended December 31, 2019. Additionally, the initial funding of the Cognizant U.S. Foundation recorded in 2018 has been excluded from segment operating profits for the year ended December 31, 2018. These costs are included in "unallocated costs" in the table below. Additionally, management has determined that it is not practical to allocate identifiable assets by segment, since such assets are used interchangeably among the segments.

For revenues by reportable segment and geographic area, please see [Note 2](#).

Segment operating profits by reportable segment were as follows:

	2019	2018	2017 ⁽¹⁾
	(in millions)		
Financial Services	\$ 1,605	\$ 1,713	\$ 1,771
Healthcare	1,261	1,416	1,301
Products and Resources	1,028	1,023	923
Communications, Media and Technology	732	692	601
Total segment operating profit	4,626	4,844	4,596
Less: unallocated costs	2,173	2,043	2,115
Income from operations	\$ 2,453	\$ 2,801	\$ 2,481

- (1) As described above, in 2019 we made changes to the internal measurement of segment operating profits. While we have restated the 2018 results to conform to the new methodology, it is impracticable for us to restate our 2017 segment operating results as the detailed information required for the allocation of such costs to the segments is not reasonably available.

Geographic Area Information

Long-lived assets by geographic area are as follows:

	2019	2018	2017
	(in millions)		
Long-lived Assets: ⁽¹⁾			
North America ⁽²⁾	\$ 445	\$ 436	\$ 360
Europe	104	105	63
Rest of World ⁽³⁾	760	853	901
Total	\$ 1,309	\$ 1,394	\$ 1,324

- (1) Long-lived assets include property and equipment, net of accumulated depreciation and amortization.
(2) Substantially all relates to the United States.
(3) Substantially all relates to India.

Note 20 — Quarterly Financial Data (Unaudited)

Summarized quarterly results for the two years ended December 31, 2019 are as follows:

2019	Three Months Ended				Full Year
	March 31	June 30	September 30	December 31	
	(in millions, except per share data)				
Revenues	4,110	\$ 4,141	\$ 4,248	\$ 4,284	\$ 16,783
Cost of revenues (exclusive of depreciation and amortization expense shown separately below)	2,575	2,629	2,681	2,749	10,634
Selling, general and administrative expenses	871	719	706	676	2,972
Restructuring charges	2	49	65	101	217
Depreciation and amortization expense	123	125	127	132	507
Income from operations	539	619	669	626	2,453
Net income	441	509	497	395	1,842
Basic earnings per share ⁽¹⁾	\$ 0.77	\$ 0.90	\$ 0.90	\$ 0.72	\$ 3.30
Diluted earnings per share ⁽¹⁾	\$ 0.77	\$ 0.90	\$ 0.90	\$ 0.72	\$ 3.29

2018	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	710	805	723	769	3,007
Restructuring charges	1	—	11	7	19
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 ⁽¹⁾	\$ 0.89	\$ 0.78	\$ 0.82	\$ 1.12	\$ 3.61
Diluted earnings per share ⁽¹⁾	\$ 0.88	\$ 0.78	\$ 0.82	\$ 1.12	\$ 3.60

(1) The sum of the quarterly basic and diluted earnings per share for each of the four quarters may not equal the earnings per share for the year due to rounding.

Note 21 — Subsequent Events

Dividend

On February 3, 2020, our Board of Directors approved the Company's declaration of a \$0.22 per share dividend with a record date of February 18, 2020 and a payment date of February 28, 2020.

Share Repurchase Program

In February 2020, our Board of Directors increased our stock repurchase program authorization from \$5.5 billion to \$7.5 billion, excluding fees and expenses, and eliminated the expiration date of the program.

Cognizant Technology Solutions Corporation
Valuation and Qualifying Accounts
For the Years Ended December 31, 2019, 2018 and 2017
(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:					
2019	\$ 78	\$ (11)	\$ —	\$ —	\$ 67
2018	\$ 65	\$ 13	\$ —	\$ —	\$ 78
2017	\$ 48	\$ 15	\$ 3	\$ 1	\$ 65
Warranty accrual:					
2019	\$ 32	\$ 33	\$ —	\$ 32	\$ 33
2018	\$ 30	\$ 32	\$ —	\$ 30	\$ 32
2017	\$ 26	\$ 30	\$ —	\$ 26	\$ 30
Valuation allowance—deferred income tax assets:					
2019	\$ 11	\$ 15	\$ —	\$ 2	\$ 24
2018	\$ 10	\$ 1	\$ —	\$ —	\$ 11
2017	\$ 10	\$ —	\$ —	\$ —	\$ 10

DESCRIPTION OF CAPITAL STOCK

The following description of the capital stock of Cognizant Technology Solutions Corporation (the “Company,” “Cognizant,” “we,” “us,” and “our”) and certain provisions of our Restated Certificate of Incorporation and Amended and Restated Bylaws are summaries and are qualified in their entirety by reference to the full text of our Restated Certificate of Incorporation and Amended and Restated Bylaws and applicable provisions of the General Corporation Law of the State of Delaware (the “DGCL”).

Cognizant’s authorized capital stock consists of 1,015,000,000 shares consisting of (i) 1,000,000,000 shares of Class A common stock, par value \$0.01 per share (“Common Stock”), and (ii) 15,000,000 shares of preferred stock, par value \$0.10 per share (“Preferred Stock”). No shares of preferred stock have been designated or issued.

Common Stock

Holders of our Common Stock are entitled to one vote per share on all matters to be voted on by stockholders. The holders of Common Stock are not entitled to cumulative voting rights. All matters to be voted on by stockholders, other than the election of directors, must be approved by a majority of the votes cast. With respect to the election of directors, a nominee shall be elected if the votes cast for such nominee’s election exceed the votes cast against such nominee’s election; provided, however, that directors are elected by a plurality of the votes cast at any meeting of stockholders for which the Secretary of the Company determines that the number of nominees exceeds the number of directors to be elected as of the record date for such meeting. In the event of a voluntary or involuntary liquidation, dissolution or winding up of Cognizant, the holders of our Common Stock would be entitled to share ratably in all assets remaining after payment of liabilities. Holders of our Common Stock have no preemptive rights, and the shares of Common Stock are not subject to further calls or assessment by Cognizant.

Holders of our Common Stock will receive dividends in an equal amount per share in the event any dividend is declared by the Cognizant Board of Directors.

The rights, preferences and privileges of holders of Common Stock are subject to and may be adversely affected by the rights of the holders of shares of any series of Preferred Stock that we may designate and issue in the future.

Preferred Stock

Cognizant’s Restated Certificate of Incorporation authorizes the issuance of Preferred Stock with such designations, rights and preferences as may be determined from time to time by its Board of Directors or a duly authorized committee of its Board of Directors. Accordingly, Cognizant’s Board of Directors is empowered, without stockholder approval, to issue Preferred Stock with dividends, liquidation, voting or other rights that could adversely affect the voting power or other rights of the holders of Cognizant Common Stock.

Anti-Takeover Provisions

Various provisions of our Restated Certificate of Incorporation, our Amended and Restated Bylaws and the DGCL may discourage, delay or prevent a change in control or takeover attempt of Cognizant by a third party that is opposed by our Board of Directors.

Certain Provisions of Delaware Law

We are subject to Section 203 of the DGCL. In general, Section 203 prohibits a publicly held Delaware corporation from engaging in a business combination with an interested stockholder for a period of three years following the date the person became an interested stockholder, unless the business combination or the transaction in which the person became an interested stockholder is approved in a prescribed manner. Generally, a business combination includes mergers, consolidations, sales or other dispositions of assets having an aggregate value in excess of 10% of the consolidated assets of the corporation and certain transactions that would increase the interested stockholder’s proportionate share ownership in the corporation. Generally, an interested stockholder is a person who owns 15% or more of a corporation’s voting stock or is an affiliate or associate of the corporation and owned 15% or more of the corporation’s voting stock within three years prior to the determination of interested stockholder status. The existence of this provision could prevent a takeover of Cognizant with respect to transactions not approved

in advance by our Board of Directors, including takeover attempts that might result in a premium over the market price of our Common Stock.

Limitation of Liability and Indemnification of Officers and Directors

Cognizant's Restated Certificate of Incorporation and Amended and Restated Bylaws provide that the liability of the directors for monetary damages shall be limited to the fullest extent permissible under Delaware law. This limitation of liability does not affect the availability of injunctive relief or other equitable remedies. Cognizant's Amended and Restated Bylaws provide that Cognizant will indemnify its directors and officers to the fullest extent permissible under Delaware law. These indemnification provisions require Cognizant to indemnify these persons against certain liabilities and expenses to which they may become subject by reason of their service as a director or officer of Cognizant or any of its affiliated enterprises. In addition, Cognizant has indemnification agreements covering its directors and executive officers providing indemnification to the fullest extent permitted by applicable law and also setting forth certain procedures, including the advancement of expenses, that apply in the event of a claim for indemnification.

Stockholders May Not Act by Written Consent

Unless otherwise provided in a company's certificate of incorporation, Delaware law permits any action required or permitted to be taken by stockholders of a company at a meeting to be taken without notice, without a meeting and without a stockholder vote if a written consent setting forth the action to be taken is signed by the holders of shares of outstanding stock having the requisite number of votes that would be necessary to authorize the action at a meeting of stockholders at which all shares entitled to vote were present and voted. Cognizant's Restated Certificate of Incorporation and Amended and Restated Bylaws require that stockholder action be taken only at an annual or special meeting of stockholders, and prohibit stockholder action by written consent.

Limitations on Stockholders' Ability to Call Special Meetings

Cognizant's Restated Certificate of Incorporation and Amended and Restated Bylaws provide that special meetings of stockholders may only be called by the Chief Executive Officer, the Board of Directors, or by the Secretary upon the written request of stockholders having an aggregate "net long position" of not less than ten percent (10%) of the outstanding shares of the Company, subject to compliance with certain procedural requirements. Business transacted at any special meeting is limited to the purpose stated in the notice of the meeting.

Advance Notice Procedures

Cognizant's Amended and Restated Bylaws require that, at any annual or special meeting of stockholders, the only nominations of persons for election to the board of directors and proposals of business to be considered will be the nominations made or proposals of business brought before the meeting:

- pursuant to Cognizant's notice of meeting;
- by or at the direction of the Board of Directors; and
- by a stockholder of Cognizant who was a stockholder of record of Cognizant at the time of the delivery of the notice provided for in the Amended and Restated Bylaws, who is entitled to vote at the meeting and who complies with the notice procedures set forth in the Amended and Restated Bylaws.

These requirements may preclude nominations or the conduct of business by stockholders at a particular stockholders meeting if the proper procedures are not followed, and may discourage or deter a third party from attempting to obtain control of Cognizant, even if this attempt might be viewed as beneficial to Cognizant by its stockholders.

LIST OF SUBSIDIARIES OF THE COMPANY

EXHIBIT 21.1

The following is a list of subsidiaries of the Company as of December 31, 2019:

<u>Name of the entity</u>	<u>Jurisdiction</u>
Cognizant Technology Solutions de Argentina S.R.L.	Argentina
Softvision SAS	Argentina
Adaptra Group Holdings Pty Limited	Australia
Adaptra Group Pty Limited	Australia
Cognizant Technology Solutions Australia Pty Ltd	Australia
Contino Pty Ltd	Australia
Dylis Consulting Pty Ltd	Australia
Odecee Pty Limited	Australia
Odecee Unit Trust	Australia
SAASFOCUS PTY LTD	Australia
Softvision Australia Pty Ltd	Australia
Cognizant Technology Solutions Austria GmbH	Austria
Cognizant Technology Solutions Belgium SA	Belgium
Hedera Consulting BVBA	Belgium
Hedera Group BVBA	Belgium
Hedera Insights BVBA	Belgium
Zenith Technologies BVBA	Belgium
Cognizant Servicos de Tecnologia e Software do Brasil Ltda	Brazil
Software Paradigms International Sistemas de Informatica Ltda	Brazil
Cognizant Technology Solutions (Québec) Inc.	Canada
Cognizant Technology Solutions Canada, Inc.	Canada
Softvision Canada, ULC OA Momentus Software	Canada
Cognizant Technology Solutions de Chile SpA	Chile
Cognizant Technology Solutions (Dalian) Co., Ltd.	China
Cognizant Technology Solutions (Shanghai) Co, Ltd.	China
ZT Automation Limited	China
Cognizant Technology Solutions Colombia S.A.S.	Colombia
Netcentric LATAM S.A.S.	Colombia
Cognizant Technology Solutions de Costa Rica Sociedad de Responsabilidad Limitada	Costa Rica
Wellworth Limited	Cyprus
Cognizant Technology Solutions s.r.o.	Czech Republic
Cognizant Technology Solutions Denmark ApS	Denmark
Cognizant El Salvador, Sociedad Anonima de Capital Variable	El Salvador
Cognizant Technology Solutions Finland Oy	Finland
Oy Samlink Ab	Finland
Samlink Technology Solutions Finalnd Oy	Finland
Cognizant Business Consulting SAS	France
Cognizant France SAS	France
Cognizant Horizon Financial Services	France
Cognizant Technology Solutions France SAS	France
Cognizant Deutschland GmbH	Germany

<u>Name of the entity</u>	<u>Jurisdiction</u>
Cognizant Energy and Financial Services Consulting GmbH	Germany
Cognizant Technology Solutions GmbH	Germany
Netcentric Deutschland GmbH	Germany
Zenith Technologies GmbH	Germany
Cognizant Technology Solutions Guatemala Limitada	Guatemala
Cognizant Technology Solutions Hong Kong Limited	Hong Kong
Cognizant Technology Solutions Hungary Kft.	Hungary
Arrow Designs India Private Limited	India
Cognizant Technology Solutions India Private Limited	India
Medfin India Private Limited	India
SaaSforce Consulting Private Limited	India
Softvision Software Paradigms Private Limited	India
Software Paradigms (India) Financial Services Private Limited	India
Software Paradigms Infotech Private Limited	India
Ygyan Consulting Private Limited	India
Zentek Export Engineering Private Limited	India
Cognizant Technology Solutions Ireland Limited	Ireland
Linture Limited	Ireland
LZ Lifescience Limited	Ireland
Merit Software (Utility) Limited	Ireland
Merit Software Holdings Limited	Ireland
Merit Software Limited	Ireland
Talrick Limited	Ireland
Target Environmental Health & Safety Limited	Ireland
Vedsul Limited	Ireland
Zenith Information Systems Limited	Ireland
Zenith Technologies Limited	Ireland
ZT Learning Limited	Ireland
Cognizant Technology Solutions Italia, S.p.A.	Italy
Cognizant Japan KK	Japan
Cognizant Business Services Limited	Jersey
Cognizant Technology Solutions Jersey Limited	Jersey
Sterling Bidco Limited	Jersey
Sterling Topco Limited	Jersey
Cognizant Technology Solutions Lithuania, UAB	Lithuania
Evoco, UAB	Lithuania
Cognizant Technology Solutions Luxembourg S.à r.l	Luxembourg
CogDev Malaysia SDN. BHD.	Malaysia
Cognizant Oil and Gas Consulting Services Malaysia SDN. BHD.	Malaysia
Cognizant (Mauritius) Ltd.	Mauritius
Cognizant Technology Solutions Ltd	Mauritius
Cognizant Technology Solutions de Mexico, S.A. de C.V.	Mexico
Idea Couture Latin America, S.A.P.I. de C.V.	Mexico
Cognizant Consulting SARL	Morocco
SPI Nepal Private Limited	Nepal

<u>Name of the entity</u>	<u>Jurisdiction</u>
Cognizant Technology Solutions (Netherlands) B.V.	Netherlands
Cognizant Technology Solutions B.V.	Netherlands
Cognizant Technology Solutions Benelux B.V.	Netherlands
Netcentric Benelux BV	Netherlands
Cognizant Technology Solutions New Zealand Limited	New Zealand
Cognizant Accounting Services Norway AS	Norway
Cognizant Business Services Norway AS	Norway
Cognizant Oil and Gas Consulting Services Norway AS	Norway
Cognizant Technology Solutions Norway AS	Norway
Cognizant Technology Solutions Philippines, Inc.	Philippines
MediCall Philippines, Inc.	Philippines
Cognizant Technology Solutions Poland sp. z o. o. w organizacji	Poland
Cognizant Technology Solutions Portugal, Unipessoal LDA	Portugal
Netcentric Eastern Europe S.R.L.	Romania
Softvision S.R.L.	Romania
Cognizant Technology Solutions Saudi LLC	Saudi Arabia
Cognizant Technology Solutions Asia Pacific Pte. Ltd.	Singapore
SPI Eurasia Pte. Ltd.	Singapore
Zentek Engineering Pte Limited	Singapore
Cognizant Technology Solutions Slovakia, s.r.o.	Slovakia
Cognizant Technology Solutions South Africa (Proprietary) Limited	South Africa
Cognizant Technology Solutions Spain, S.L.	Spain
Equinox Consulting, S.A.	Spain
Netcentric Ibérica SLU	Spain
CogDev Solutions AB	Sweden
Cognizant Technology Solutions Sweden AB	Sweden
Cognizant Technology Solutions AG	Switzerland
Enterprise Services AG	Switzerland
Netcentric AG	Switzerland
Zenith Technologies GmbH	Switzerland
Cognizant Technology Solutions (Thailand) Co., Ltd.	Thailand
Cognizant (GB) Limited	United Kingdom
Cognizant Business Services UK Limited	United Kingdom
Cognizant Holdings UK Limited	United Kingdom
Cognizant Oil and Gas Consulting Services UK Ltd	United Kingdom
Cognizant Technology Solutions Global Services Limited	United Kingdom
Cognizant Worldwide Limited	United Kingdom
Contino Solutions Limited	United Kingdom
Head London Limited	United Kingdom
Merit Research Limited	United Kingdom
Netcentric UK Ltd	United Kingdom
Softvision U.K. Limited	United Kingdom
Zentek Engineering (UK) Limited	United Kingdom
Zone Limited	United Kingdom
ZT Learning (UK) Limited	United Kingdom

<u>Name of the entity</u>	<u>Jurisdiction</u>
Advanced Technology Group, Inc.	United States
Allocable, LLC	United States
Arrow Consulting & Design, LLC	United States
Arrow Digital International, LLC	United States
Arrow Digital Ukraine, LLC	United States
Arrow Digital, LLC	United States
Avectus Healthcare Solutions, LLC	United States
BHS Hospital Services, Inc.	United States
BHS India Holdings, Inc.	United States
BHS India Holdings, LLC	United States
BHS Physician Services, Inc.	United States
Cognizant Business Services Corporation	United States
Cognizant Domestic Holdings Corporation	United States
Cognizant Healthcare Services, LLC	United States
Cognizant International Holdings Corporation	United States
Cognizant Mortgage Services Corporation	United States
Cognizant Oil and Gas Consulting Services U.S. Inc.	United States
Cognizant Resources LLC	United States
Cognizant Technology Solutions Holdings LLC	United States
Cognizant Technology Solutions Overseas Corporation	United States
Cognizant Technology Solutions Services, LLC	United States
Cognizant Technology Solutions U.S. Corporation	United States
Cognizant TriZetto Software Group, Inc.	United States
Contino Holdings, Inc.	United States
Contino US, LLC	United States
CSS Investment LLC	United States
Double Prime, LLC	United States
Hotcakes Commerce LLC	United States
LZ Lifescience US Inc.	United States
MediCall	United States
Mustache TV LLC	United States
Mustache, LLC	United States
Prospective Payment Specialists, Inc.	United States
Receivables Outsourcing, LLC	United States
ROI Access Management Services, LLC	United States
ROI Holding Company, LLC	United States
Shiloh Technologies, LLC	United States
Softvision Canada, LLC	United States
Softvision Consulting, LLC	United States
Softvision LLC (a Delaware entity)	United States
Softvision Partner LLC	United States
Softvision, LLC (a Georgia entity)	United States
SPI Brazil I, LLC	United States
SPI Brazil II, LLC	United States
SPI Eurasia, LLC	United States

Name of the entity**Jurisdiction**

TMG Health, Inc.

United States

TriZetto Provider Solutions, LLC

United States

Zentek Automation US Inc.

United States

ZT Learning Inc.

United States

Consent of Independent Registered Public Accounting Firm

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (Nos. 333-226015, 333-218543, 333-191249, 333-169534 and 333-114464) of Cognizant Technology Solutions Corporation of our report dated February 14, 2020, relating to the financial statements and financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

New York, New York

February 14, 2020

CERTIFICATION

I, Brian Humphries, 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 14, 2020

/s/ BRIAN HUMPHRIES

Brian Humphries
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 14, 2020

/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, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), the undersigned, Brian Humphries, 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 14, 2020

/s/ BRIAN HUMPHRIES

Brian Humphries
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, 2019 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 14, 2020

/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.