

NCR CORP
Form 10-K
February 28, 2019
Table of Contents

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

FORM 10-K

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

For the fiscal year ended December 31, 2018
Commission File Number 001-00395

NCR CORPORATION
(Exact name of registrant as specified in its charter)

Maryland 31-0387920
(State or other jurisdiction of (I.R.S. Employer
incorporation or organization) Identification No.)
864 Spring Street NW
Atlanta, GA 30308
(Address of principal executive offices) (Zip Code)
Registrant's telephone number, including area code: (937) 445-5000
Securities registered pursuant to Section 12(b) of the Act:
Title of each class Name of each exchange on which registered
Common Stock, par value \$0.01 per share New York Stock Exchange
Securities registered pursuant to Section 12(g) of the Act: None

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

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

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

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

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

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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 ☒ Accelerated filer ☐

Non-accelerated filer ☐ Smaller reporting company ☐

Emerging growth company ☐

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 voting stock held by non-affiliates of the registrant as of June 30, 2018, was approximately \$3.5 billion. As of February 15, 2019, there were approximately 118.9 million shares of common stock issued and outstanding.

Table of Contents

DOCUMENTS INCORPORATED BY REFERENCE

Part Portions of the Registrant's Definitive Proxy Statement for its Annual Meeting of Stockholders to be filed
 III: pursuant to Regulation 14A within 120 days after the Registrant's fiscal year end of December 31, 2018 are
 incorporated by reference into Part III of this Report.

TABLE OF CONTENTS

Item Description	Page
<u>Forward-Looking Statements</u>	<u>i</u>
PART I	
1. <u>Business</u>	<u>1</u>
1A. <u>Risk Factors</u>	<u>8</u>
1B. <u>Unresolved Staff Comments</u>	<u>21</u>
2. <u>Properties</u>	<u>21</u>
3. <u>Legal Proceedings</u>	<u>21</u>
4. <u>Mine Safety Disclosures</u>	<u>21</u>
PART II	
5. <u>Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities</u>	<u>23</u>
6. <u>Selected Financial Data</u>	<u>25</u>
7. <u>Management's Discussion and Analysis of Financial Condition and Results of Operations</u>	<u>26</u>
7A. <u>Quantitative and Qualitative Disclosures about Market Risk</u>	<u>46</u>
8. <u>Financial Statements and Supplementary Data</u>	<u>47</u>
9. <u>Changes in and Disagreements with Accountants on Accounting and Financial Disclosure</u>	<u>121</u>
9A. <u>Controls and Procedures</u>	<u>121</u>
9B. <u>Other Information</u>	<u>122</u>
PART III	
10. <u>Directors, Executive Officers and Corporate Governance</u>	<u>122</u>
11. <u>Executive Compensation</u>	<u>122</u>
12. <u>Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters</u>	<u>122</u>
13. <u>Certain Relationships and Related Transactions and Director Independence</u>	<u>122</u>
14. <u>Principal Accountant Fees and Services</u>	<u>122</u>
PART IV	
15. <u>Exhibits and Financial Statement Schedule</u>	<u>123</u>
16. <u>Form 10-K Summary</u>	<u>131</u>

This Report contains trademarks, service marks and registered marks of NCR Corporation and its subsidiaries, and of other companies, as indicated. Unless otherwise indicated, the terms “NCR,” the “Company,” “we,” “us,” and “our” refer to NCR Corporation and its subsidiaries.

Table of Contents

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements use words such as “expect,” “anticipate,” “outlook,” “intend,” “plan,” “believe,” “will,” “should,” “would,” “could,” “provisional” and words of similar meaning. Statements that describe our plans, goals, intentions, strategies or financial outlook, and statements that do not relate to historical or current fact, are examples of forward-looking statements. The forward-looking statements in this Annual Report include statements regarding NCR’s revenue growth expectations and investments in strategic growth platforms; NCR’s expected shift to recurring revenue streams; NCR’s spend optimization program in 2019 and its impact on operating margins; NCR’s capital allocations for 2019 including internal investments in strategic growth platforms; NCR’s expectations regarding acquisition activity; NCR’s expected areas of focus to drive growth and create long-term stockholder value; NCR’s plans to diversify revenue and streamline costs; and expectations regarding ATM production rates and ATM revenues. Forward-looking statements are based on our current beliefs, expectations and assumptions, which may not prove to be accurate, and involve a number of known and unknown risks and uncertainties, many of which are out of our control. Forward-looking statements are not guarantees of future performance, and there are a number of important factors that could cause actual outcomes and results to differ materially from the results contemplated by such forward-looking statements, including those factors listed in Item 1A “Risk Factors” and Item 7 “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” of this Annual Report on Form 10-K, including factors relating to: the strength of demand and pricing for ATMs and other financial services hardware and its effect on the results of our businesses and reportable segments; domestic and global economic and credit conditions including, in particular, those resulting from the imposition or threat of protectionist trade policies or import or export tariffs, global and regional market conditions and spending trends in the financial services and retail industries, new comprehensive U.S. tax legislation, modified or new global or regional trade agreements, the determination by the United Kingdom to exit the European Union, uncertainty over further potential changes in Eurozone participation and fluctuations in oil and commodity prices; the transformation of our business and shift to recurring revenue; our ability to improve execution in our sales and services organizations; our ability to successfully introduce new solutions and compete in the technology industry; cybersecurity risks and compliance with data privacy and protection requirements; the possibility of disruptions in or problems with our data center hosting facilities; defects or errors in our products; the impact of our indebtedness and its terms on our financial and operating activities; the historical seasonality of our sales; tax rates and U.S. tax legislation; foreign currency fluctuations; the success of our restructuring plans and cost reduction initiatives, including those in our Hardware segment; manufacturing disruptions, including those caused by or related to outsourced manufacturing; the availability and success of acquisitions, divestitures and alliances; our pension strategy and underfunded pension obligations; reliance on third party suppliers; the impact of the terms of our strategic relationship with Blackstone and our Series A Convertible Preferred Stock; our multinational operations, including in new and emerging markets; collectability difficulties in subcontracting relationships in certain geographical markets; development and protection of intellectual property; workforce turnover and the ability to attract and retain skilled employees; uncertainties or delays associated with the transition of key business leaders; environmental exposures from our historical and ongoing manufacturing activities; and uncertainties with regard to regulations, lawsuits, claims, and other matters across various jurisdictions. Any forward-looking statement speaks only as of the date on which it is made. We do not undertake any obligation to publicly update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

Table of Contents

PART I

Item 1. BUSINESS

General

Business and Industries Served

NCR is a leading software- and services-led enterprise provider in the financial, retail, hospitality and telecommunications and technology industries, with business in 180 countries. NCR offers a range of solutions that help businesses of all sizes compete in an ever-evolving landscape of physical and digital consumers by providing software, advisory and consulting services, hardware, support and managed services that run businesses end to end. Our portfolio includes digital first offerings for banking, restaurants and retailers as well as payments, multi-vendor connected device services, automated teller machines (ATMs), point of sale (POS) terminals and self-service technologies. We also resell third-party networking products and provide related service offerings in the telecommunications and technology sectors. Our solutions create value for our customers by increasing productivity and allowing them to address consumer demand for convenience, value and individual service across different commerce channels using a digital first approach.

Company History

NCR was originally incorporated in 1884 and was a publicly traded company on the New York Stock Exchange prior to its merger with a wholly-owned subsidiary of AT&T Corp. (AT&T) on September 19, 1991. On December 31, 1996, AT&T distributed all of its interest in NCR to its stockholders. NCR common stock is listed on the New York Stock Exchange and trades under the symbol "NCR".

Operating Segments

We categorize our operations into three reportable segments: Software, Services and Hardware.

The information required by Item 1 with respect to our reportable segments and financial information regarding our geographic areas and those reportable segments can be found in Item 7 of Part II of this Report under "Revenue and Operating Income by Segment" as well as in Item 8 of Part II of this Report as part of Note 13, "Segment Information and Concentrations" of the Notes to Consolidated Financial Statements and in Item 1A of this Report under "Multinational Operations," and is incorporated herein by reference.

As of January 1, 2019, NCR began management on an industry basis, changing from the previous model of management on a solution basis. This change to our segment reporting for fiscal year 2019 and future periods is further described in Note 1, "Description of Business and Significant Accounting Policies" of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report.

Products and Services

We are an enterprise provider selling a portfolio of digital first software, services and hardware. Our offerings fall into the following categories:

Software

Our software offerings include industry-focused software platforms such as our multi-vendor ATM software application suite (providing ATM management systems) for financial services, frictionless commerce, Outdoor Payment Terminals with an Interactive Consumer experience (OPTIC) and Aloha POS Platform and end-to-end payment processing solutions for the retail and hospitality industries, and NCR Silver, a cloud-based POS system for small businesses. We also provide a portfolio of other industry-oriented software applications, which include cash management software, video banking software, fraud and loss prevention applications, check and document imaging, remote-deposit capture, and customer-facing mobile and digital banking applications, such as web-enablement and bill payment (including mobile bill payment), for the financial industry; and secure electronic and mobile payment solutions, software applications for quick-service restaurants, table-service restaurants, convenience and fuel retailers

and other businesses, and back-office inventory and store and restaurant management applications, including cloud-based loss prevention video technology and services, for the retail and hospitality industries, as well as cross-industry human capital management software applications. We also provide in-depth industry and solution based consulting and professional services focused on solution implementation, integration, customization and optimization, and cloud hosting services. Our software platforms and applications, which are delivered on software as a service (SaaS), enterprise license and other bases, are designed to work seamlessly together with our hardware products or as stand-alone solutions. Our software solutions deliver a consistent and rich consumer experience across channels, while enabling business management to optimize operations and perform advanced data analytics.

Services

Digital Connected Services are an essential and integrated component of NCR's complete solution offerings to help companies increase availability and security of consumer touchpoints, improve operational efficiency and enhance the customer experience. We provide

Table of Contents

global end-to-end services from assessment and preparation, to staging, installation and implementation, and multivendor maintenance and support. We also provide systems management and complete managed services for our product offerings. We build remote and predictive diagnostics into our maintenance and managed services offerings, which are designed to predict and address information technology and other issues quickly before they happen. In addition, we provide installation, maintenance and managed services for third party networking products to a broad base of customers in the telecommunications and technology sectors.

Hardware

We provide financial institutions, retailers and independent solution providers with a suite of financial-oriented self-service hardware products. Our financial industry hardware products include multi-function ATMs, interactive teller machines (ITMs), thin-client ATMs, cash dispensers, cash recycling ATMs and hardware for check and image processing. Our financial services hardware products are designed to quickly, reliably and securely process consumer banking transactions while providing low cost of ownership, efficiency and a modernized consumer experience. We also provide retail- and hospitality-oriented hardware products such as point of sale terminals, self-checkout kiosks, order and payment kiosks, bar code scanners, printers and peripherals to retailers, restaurants, food service companies and entertainment and sports venues worldwide. Our retail and hospitality hardware products are designed to improve operational efficiency, increase customer satisfaction, streamline order and transaction processing and reduce operating costs. We also provide other self-service kiosks, such as self-check in/out kiosk solutions for airlines, hotels and casinos that allow guests to check in/out without assistance, wayfinding solutions (locating products or navigating through large, complex buildings and campuses), digital signage, bill payment kiosks and gift registries. These solutions create pleasant and convenient experiences for consumers and enable our customers to reduce costs and operate in a digital first environment. In addition, we resell third party networking products to a broad base of customers in the telecommunications and technology sectors.

Target Markets and Distribution Channels

NCR provides its software, services and hardware solutions to customers of varying sizes in the financial, retail, hospitality and telecommunications and technology industries.

Our financial solutions primarily serve the financial industry with particular focus on retail banking, which includes traditional providers of consumer banking and financial services. These solutions also serve the retail markets through convenience banking products for retailers designed to complement their core businesses. Our financial solutions customers are located throughout the world in both developed and emerging markets. We have historically sold most of our financial solutions through a direct sales channel, although a portion of revenue is derived through distributors and value-added resellers.

We provide POS and self-service kiosk solutions to the retail and hospitality industries. Retail customers include department stores, specialty retailers, mass merchandisers, catalog stores, supermarkets, hypermarkets, grocery stores, drug stores, wholesalers, convenience stores, petroleum outlets and small businesses. Hospitality customers include retailers, restaurants, food service providers and sports and entertainment venues (including stadiums, arenas and cinemas) and small businesses. We also provide our self-service solutions to customers in the travel industry, including airlines, airports, car rental companies, and hotel/lodging operators. POS and self-service kiosk solutions are sold through a direct sales force and through relationships with value-added resellers, distributors, dealers and other indirect sales channels.

We provide service and support for our products and solutions through services contracts with our customers. We have also established managed services contracts with key customers and continue to pursue additional managed services relationships. Longer term managed services arrangements can help improve the efficiency and performance

of a customer's business, and also increase the strategic and financial importance of its relationship with NCR. We also service competing technologies—for example, ToshibaTec retail technologies and Diebold Nixdorf ATMs. The primary sales channel for our services is our direct sales teams, which exist across all geographies where we operate around the world. Our services professionals provide these services directly to end customers.

Competition

We face a diverse group of competitors in the industries in which we sell our digital first portfolio of software, services and hardware. The primary competitive factors can vary by geographic area where we operate around the world, but typically include: value and quality of the solutions or products; total cost of ownership; industry knowledge of the vendor; the vendor's ability to provide and support a total end-to-end solution; the vendor's ability to integrate new and existing systems; fit of the vendor's strategic vision with the customer's strategic direction; and quality of the vendor's consulting, deployment and support services.

In the financial industry, we face a variety of competitors offering financial services and software including, among others, Fidelity National Information Services Inc., Fiserv, Inc., First Data Corporation, Q2 Holdings, Inc., Kony Inc., Alkami Technology, Inc. and ACI Worldwide, Inc. In addition, we face competition from ATM manufacturers including Diebold Nixdorf, Incorporated and Nautilus

Table of Contents

Hyosung, and ATM network operators including Cardtronics plc and Euronet Worldwide, Inc., as well as many other regional firms across all geographies where we operate around the world.

In the retail and hospitality industries we face a variety of competitors across all geographies where we operate around the world. Our competitors vary by market segment, product, service offering and geographic area, and include ToshibaTec Corporation, Diebold Nixdorf, Incorporated, Fujitsu Limited, HP Inc., JDA Software Group, Inc., Oracle Corporation, SAP SE, PAR Technology Corporation and Datalogic S.p.A., among others. In addition, we face new competitors including Toast, Inc., Revel Systems, Inc., Square, Inc., Upserve, Inc. and First Data Corporation, among others.

We face competition for services from other technology and service providers, as well as from independent service operators, in all geographies where we operate around the world. The primary services competitors are the companies identified above, as global technology providers continue to focus on services as a core business strategy. We also compete with a range of regional and local independent service operators across our various geographies.

Research and Development

We remain focused on designing and developing solutions that anticipate our customers' changing technological needs as well as consumer preferences. Our expenses for research and development were \$252 million in 2018, \$241 million in 2017, and \$225 million in 2016. We anticipate that we will continue to have significant research and development expenditures in the future in order to provide a continuing flow of innovative, high-quality products and services and to help maintain and enhance our competitive position. Information regarding the accounting and costs included in research and development activities is included in Note 1, "Basis of Presentation and Significant Accounting Policies" of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report under "Research and Development Costs," and is incorporated herein by reference.

Patents and Trademarks

NCR seeks patent protection for its innovations, including improvements, associated with its software, hardware, services, solutions, and developments, where such protection is likely to provide value to NCR. NCR owns approximately 1,275 patents in the U.S. and numerous other patents in foreign countries. The foreign patents are generally counterparts of NCR's U.S. patents. Many of the patents owned by NCR are licensed to others, and NCR is licensed under certain patents owned by others. NCR looks to monetize its patents to drive additional value from its patent portfolio. NCR also has numerous patent applications pending in the U.S. and in foreign countries. NCR's portfolio of patents and patent applications is of significant value to NCR.

NCR has registered certain trademarks and service marks in the U.S. and in a number of foreign countries. NCR considers the "NCR" and NCR logo marks and many of its other trademarks and service marks to have significant value to NCR.

Seasonality

Our sales are historically seasonal, with lower revenue in the first quarter and higher revenue in the fourth quarter of each year. Such seasonality also causes our working capital cash flow requirements to vary from quarter to quarter depending on variability in the volume, timing and mix of sales. In addition, revenue in the third month of each quarter is typically higher than in the first and second months. Information regarding seasonality and its potential impact on our business is included in Item 1A of this Report under the caption, "Operating Results Fluctuations," and is incorporated herein by reference.

Manufacturing and Raw Materials

In most cases, there are a number of vendors providing the services and producing the parts and components that we utilize. However, there are some services and components that are purchased from single sources due to price, quality, technology or other reasons. For example, we depend on computer chips and microprocessors from Intel and operating systems from Microsoft. Certain parts and components used in the manufacturing of our ATMs and the delivery of many of our retail solutions are also supplied by single sources. In addition, there are a number of key suppliers for our businesses who provide us with critical products for our solutions.

As of December 31, 2018, NCR leverages a network of internal and third party partner facilities across the globe to manufacture its products:

- ATMs are manufactured in NCR facilities located in Columbus, Georgia, USA; Manaus, Brazil; Budapest, Hungary; and Chennai, India and partner facilities located in Chihuahua, Mexico.

- Self-checkout solutions are manufactured in NCR facilities located in Budapest, Hungary and partner facilities located in Chihuahua, Mexico and Xiamen, China.

Table of Contents

Kiosk solutions are manufactured in NCR facilities located in Budapest, Hungary; Manaus, Brazil; and Chennai, India and partner facilities in Buford, Georgia, USA.

POS/Display terminals are manufactured in NCR facilities located in Budapest, Hungary and partner facilities located in Guadalajara, Mexico and Xiamen, China.

Additionally, NCR outsources the manufacturing of certain printers, bar code scanners and various other retail peripherals such as keyboards and cash drawers.

Further information regarding the potential impact of these relationships on our business operations, and regarding sources and availability of raw materials, is also included in Item 1A of this Report under the caption "Reliance on Third Parties," and is incorporated herein by reference.

Product Backlog

Our backlog was approximately \$1.44 billion and \$1.37 billion at December 31, 2018 and 2017, respectively. The backlog includes orders confirmed for products scheduled to be shipped as well as certain professional and transaction services to be provided. Although we believe that the orders included in the backlog are firm, some orders may be canceled by the customer without penalty. Even when penalties for cancellation are provided for in a customer contract, we may elect to permit cancellation of orders without penalty where management believes it is in our best interests to do so. Further, we have a significant portion of revenue derived from our growing service-based business (including our cloud and hosted businesses), for which backlog information has not historically been measured. Therefore, we do not believe that our backlog, as of any particular date, is necessarily indicative of revenue for any future period.

Employees

On December 31, 2018, NCR had approximately 34,000 employees and contractors worldwide.

Environmental Matters

Compliance with federal, state, and local environmental regulations relating to the protection of the environment could have a material adverse impact on our capital expenditures, cash flow, financial condition, earnings or competitive position. While NCR does not currently expect to incur material capital expenditures related to compliance with such laws and regulations, and while we believe the amounts provided in our Consolidated Financial Statements are adequate in light of the probable and estimable liabilities in this area, there can be no assurances that environmental matters will not lead to a material adverse impact on our capital expenditures, earnings or competitive position. A detailed discussion of the current estimated impacts of compliance issues relating to environmental regulations, particularly the Fox River and Kalamazoo River matters, is reported in Item 8 of Part II of this Report as part of Note 10, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements and is incorporated herein by reference. Further information regarding the potential impact of compliance with federal, state and local environmental regulations is also included in Item 1A of this Report under the caption "Environmental," and is incorporated herein by reference.

Table of Contents

Executive Officers of the Registrant

The Executive Officers of NCR (as of February 28, 2019) are as follows:

Name	Age	Position and Offices Held
Frank R. Martire	71	Executive Chairman
Michael D. Hayford	59	President and Chief Executive Officer
Owen J. Sullivan	61	Chief Operating Officer
Andre J. Fernandez	50	Executive Vice President and Chief Financial Officer
James M. Bedore	59	Executive Vice President, General Counsel and Secretary
Debra Bronder	61	Senior Vice President and Chief Human Resources Officer
Adrian Button	46	Senior Vice President, Hardware Product Operations
Daniel W. Campbell	58	Executive Vice President, NCR Global Sales
J. Robert Ciminera	61	Executive Vice President, Global Customer Services
Frank D'Angelo	73	Executive Vice President and President, NCR Banking
Paul Langenbahn	50	Executive Vice President and President, NCR Commerce

Set forth below is a description of the background of each of the Executive Officers.

Frank R. Martire is Executive Chairman of NCR, a position he has held since May 2018. Mr. Martire most recently served as Non-Executive Chairman of Fidelity National Information Services Inc. (FIS). From 2015 to 2017, he served as Executive Chairman of FIS, and from 2009 to 2015 was President and Chief Executive Officer of FIS after its acquisition of Metavante Technologies, Inc. (Metavante). Mr. Martire previously served as Chief Executive Officer of Metavante from 2003 to 2009 and President from 2003 to 2008. Prior to that, he was President and Chief Operating Officer of Call Solutions Inc. from 2001 to 2003, and President and Chief Operating Officer, Financial Institution Systems and Services Group, of Fiserv, Inc., from 1991 to 2001. Mr. Martire serves as Chairman of the Board of Directors of J. Alexander's Holdings, Inc. He is also Chairman of the Board of Sacred Heart University, a Board member of the Baptist Health System, Inc., Jacksonville University and Cannae Holdings, Inc., and a member of the Leadership Foundation of the Mayo Clinic. Mr. Martire holds a Master's degree in Finance from the University of New Haven, Connecticut, and a Bachelor of Science degree in Economics from Sacred Heart University. Mr. Martire became a director of NCR on May 31, 2018.

Michael D. Hayford is President and Chief Executive Officer of NCR, a position he has held since April 2018. Mr. Hayford was most recently Founding Partner of Motive Partners, an investment firm focused on technology-enabled companies that power the financial services industry. From 2009 until his retirement in 2013, Mr. Hayford served as the Executive Vice President and Chief Financial Officer at Fidelity National Information Services Inc. (FIS), a financial services technology company. Prior to joining FIS, Mr. Hayford was with Metavante Technologies, Inc. (Metavante), a bank technology processing company, from 1992 to 2009. He served as the Chief Operating Officer at Metavante from 2006 to 2009 and as the President from 2008 to 2009. From 2007 to 2009, Mr. Hayford also served on the Board of Directors of Metavante. Mr. Hayford is a member of the Board of Directors and the Audit Committee of Endurance International Group Holdings, Inc. and was a member of the Board of Directors and Chairman of the Audit Committee of West Bend Mutual Insurance Company from 2007 to 2018. Mr. Hayford became a director of NCR on April 30, 2018.

Owen J. Sullivan is Chief Operating Officer of NCR, a position he has held since July 2018. Mr. Sullivan was most recently an independent consultant, providing strategic planning, consulting and executive mentoring, and working with and investing alongside private equity firms and other investor groups. Prior to that, Mr. Sullivan was with ManpowerGroup, a workforce and talent management solutions company, from 2003 to 2013. At ManpowerGroup, he served as President of the Specialty Brands and Experis units from 2010 to 2013, and he served as the Chief Executive Officer of the Right Management and Jefferson Wells International, Inc. subsidiaries from 2004 to 2013 and from 2003 to 2010, respectively. Before joining ManpowerGroup, Mr. Sullivan was with Sullivan Advisors, LLC,

a provider of strategic planning, consulting and executive mentoring for small to medium-sized businesses, from 2001 to 2003. Prior to that, Mr. Sullivan was with Metavante Technologies, Inc., a bank technology processing company, from 1993 to 2001, where he served in various management roles including as the President of Metavante's Financial Services Group and Enterprise Solutions Group. Mr. Sullivan is a member of the Board of Directors of Johnson Financial Group and serves as a member of its Wealth Management, Risk and Succession Committees. Mr. Sullivan is also a member of the Board of Directors of Computer Task Group, Incorporated and serves as a member of its Compensation and Audit Committees. In addition, Mr. Sullivan is a member of the Board of Directors of Marquette University, and serves as Chairman of the Board and a member of its Executive and Nominating and Governance Committees.

Andre J. Fernandez is Executive Vice President and Chief Financial Officer of NCR, a position he has held since August 2018. Mr. Fernandez was most recently with CBS Radio Inc. (CBS Radio), a company which, prior to its merger with Entercom Communications

Table of Contents

Corp., specialized in radio broadcasting along with an integrated suite of digital properties. At CBS Radio, Mr. Fernandez served as President and CEO from 2016 to 2017, and as President from 2015 to 2016. Prior to that, Mr. Fernandez was with Journal Communications Inc. (Journal Communications), a publicly-traded diversified media company with operations including television, radio, digital and publishing, from 2008 to 2015. Mr. Fernandez served as President and Chief Operating Officer at Journal Communications from 2014 to 2015, as President and Chief Financial Officer from 2012 to 2014 and as Executive Vice President, Finance & Strategy and Chief Financial Officer from 2008 to 2012. Mr. Fernandez is Vice Chairman of the Board of Directors of Froedtert Health and serves as Chairman of its Finance Committee and as a member of its Leadership Development & Compensation and Strategic Partnership Committees. Mr. Fernandez was also a previous member of the Board of Directors of Buffalo Wild Wings Inc. and served as Chairman of its Governance Committee and as a member of its Audit Committee.

James M. Bedore is Executive Vice President, General Counsel and Secretary of NCR, a position he has held since November 2018. Prior to that, Mr. Bedore worked since 1985 as an attorney in private practice with Reinhart Boerner Van Deuren s.c. advising clients on a variety of corporate matters including mergers and acquisitions, public securities offerings on behalf of issuers and underwriters, private placements, venture capital, bank and other financing arrangements, securities compliance, reporting and disclosure obligations, corporate governance, shareholder rights and executive compensation. Mr. Bedore holds a Bachelor's of Business Administration degree from the University of Wisconsin and a Juris Doctor degree from Georgetown University Law Center.

Debra Bronder is Senior Vice President and Chief Human Resources Officer for NCR Corporation, a position she has held since July 2018. Most recently, she led Human Resources for Cardtronics, a global leader in ATM placement and transaction processing, from 2010 to 2017. Prior to that, Ms. Bronder was the Executive Vice President of Human Resources for Metavante Technologies, Inc. (Metavante), a bank technology processing company, from 1997 to 2009, and with Fidelity National Information Services, Inc. (FIS) from 2009 to 2010, leading the human resources activities for Metavante's merger with FIS in 2009. Ms. Bronder holds a bachelor degree from the University of Wisconsin - Whitewater and has received her Senior Professional in Human Resources (SPHR) certification.

Adrian Button became NCR's Senior Vice President, Hardware Product Operations, in February 2018, and from July 2017, when he joined NCR, to February 2018, Mr. Button acted as Senior Vice President Global Operations. Before he joined NCR, Mr. Button spent 19 years in various management roles with different divisions of the General Electric Company (GE). Most recently, Mr. Button served from January 2016 to July 2017 as Vice President, Supply Chain, for GE Industrial Solutions, with oversight of the division's supply chain and service operations across 41 global factories. Prior to that, Mr. Button served as Vice President, Turbomachinery, for GE's Oil & Gas division from January 2014 to December 2016, as General Manager of Global Operations Leader for GE's Oil & Gas division from March 2011 to December 2013, and in other operations and supply chain roles with GE Aviation. Mr. Button holds a bachelor degree in engineering from the University of Glamorgan, Wales, United Kingdom.

Daniel W. Campbell became NCR's Executive Vice President, NCR Global Sales, in February 2018. Previously, from July 2015 to February 2018, Mr. Campbell served as a Senior Vice President and General Manager at Virtustream, Inc., which he joined after it was acquired by EMC Corporation (EMC) in July 2015. With Virtustream, Mr. Campbell led the global sales integration with EMC's sales organization, built a global strategic alliances and channels organization, and co-launched the Virtustream Storage Cloud, an enterprise-class cloud storage platform. Before joining Virtustream, from April 1998 through July 2015, Mr. Campbell served in a series of sales and management roles of increasing responsibility at EMC, including most recently as Senior Vice President, Global Specialty Sales from October 2013 to July 2015, and Chief Operating Officer and Senior Vice President, World Wide Sales, Backup Recovery Systems Division from January 2011 to December 2013. Before joining EMC, Mr. Campbell served in various sales and management roles with Sperry, Unisys, Motorola and Wang.

J. Robert Ciminera became NCR's Executive Vice President, Global Customer Services in January 2018. Previously, Mr. Ciminera served as NCR's Executive Vice President, Hardware Product Operations, from January 2017 to January 2018, where he was responsible for NCR's hardware product portfolio. Before that, Mr. Ciminera served as NCR's Senior Vice President, Hardware Solutions and Global Operations from October 2015 to December 2016, as NCR's Senior Vice President, Integrated Supply Chain Operations from May 2014 to October 2015, and as NCR's Vice

President, Strategic Sourcing and Chief Procurement Officer from February 2009, when he joined NCR, through May 2014. Before joining NCR, Mr. Ciminera served in various sourcing, supply chain and product management roles with Avaya, Motorola, Symbol Technologies, Lucent and AT&T.

Frank D'Angelo is Executive Vice President and President, NCR Banking, a position he has held since October 2018. Mr. D'Angelo's career spans 35 years in the financial services, digital banking and payments industries. He currently serves as Chairman of the Board of Evertec Inc., a transaction and payments processing company in Latin America and the Caribbean and is also an operating partner in Hillpath Capital, a capital investment firm. He is a past Chairman of the Electronic Funds Transfer Association and served on the Payments Advisor Counsel of the Federal Reserve Bank of Philadelphia. Previously, he was President of Monitise Americas, Inc., a provider of mobile banking, payments and commerce networks. Prior to that post, Mr. D'Angelo was Executive Vice President of the Payments Solutions Group at Fidelity National Information Services Inc. (FIS) and head of Payments and Digital Banking at Metavante Technologies, Inc. He also held several executive positions over a 20-year span at Diebold, including CEO of Diebold Mexico, Vice

Table of Contents

President of the Diebold Service organization, as well as Vice President of software engineering and production management. He is a United States Air Force Veteran.

Paul Langenbahn became NCR's Executive Vice President, Global Software, in January 2017. From April 2014 to December 2016, Mr. Langenbahn served as Senior Vice President and President, Hospitality, and before that, following NCR's acquisition of Radiant Systems, Inc. in 2011, he served as Vice President, Global Sales, Marketing and Services for NCR's Hospitality division. Prior to joining NCR in 2011, Mr. Langenbahn was President of Radiant Systems' Hospitality division, and he held various other leadership roles in sales, professional services, solution management and general management at Radiant Systems, where he was instrumental in the company's development and growth.

Available Information

NCR makes available through its website at <http://investor.ncr.com>, free of charge, its Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, definitive proxy statements on Schedule 14A and Current Reports on Form 8-K, and all amendments to such reports and schedules, as soon as reasonably practicable after these reports are electronically filed or furnished to the U.S. Securities and Exchange Commission (SEC) pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (the Exchange Act). The SEC website (www.sec.gov) contains the reports, proxy statements and information statements, and other information regarding issuers that file or furnish electronically with the SEC. NCR will furnish, without charge to a security holder upon written request, the Notice of Meeting and Proxy Statement for the 2019 Annual Meeting of Stockholders (the 2019 Proxy Statement), portions of which are incorporated herein by reference. NCR also will furnish its Code of Conduct at no cost and any other exhibit at cost. Document requests are available by calling or writing to:

NCR—Investor Relations

864 Spring Street NW

Atlanta, GA 30308

Phone: 800-255-5627

E-Mail: investor.relations@ncr.com

Website: <http://investor.ncr.com>

NCR's website, www.ncr.com, contains a significant amount of information about NCR, including financial and other information for investors. NCR encourages investors to visit its website regularly, as information may be updated and new information may be posted at any time. The contents of NCR's website are not incorporated by reference into this Form 10-K and shall not be deemed "filed" under the Exchange Act.

Table of Contents

Item 1A. RISK FACTORS

The risks and uncertainties described below could materially and adversely affect our business, financial condition, results of operations, could cause actual results to differ materially from our expectations and projections, and could cause the market value of our stock to decline. You should consider these risk factors when reading the rest of this Annual Report on Form 10-K, including “Management's Discussion and Analysis of Financial Condition and Results of Operations” and our financial statements and related notes included elsewhere in this document. These risk factors may not include all of the important factors that could affect our business or our industry or that could cause our future financial results to differ materially from historic or expected results or cause the market price of our common stock to fluctuate or decline.

Economic Pressures. Our business may be negatively affected by domestic and global economic and credit conditions. Our business is sensitive to the strength of domestic and global economic and credit conditions, particularly as they affect, either directly or indirectly, the financial, retail and hospitality sectors of the economy. Economic and credit conditions are influenced by a number of factors, including political conditions, consumer confidence, unemployment levels, interest rates, tax rates, commodity prices and government actions to stimulate economic growth. The imposition or threat of protectionist trade policies or import or export tariffs, global and regional market conditions and spending trends in the financial and retail industries, new comprehensive U.S. tax legislation, modified or new global or regional trade agreements, the determination by the United Kingdom to exit the European Union (EU) and the execution of the same, uncertainty over further potential changes in Eurozone participation and fluctuations in oil and commodity prices, among other things, have created a challenging and unpredictable environment in which to market the products and services of our various businesses across our different geographies and industries. A negative or unpredictable economic climate could create uncertainty or financial pressures that impact the ability or willingness of our customers to make capital expenditures, thereby affecting their decision to purchase or roll out our products or services or, especially with respect to smaller customers, to pay accounts receivable owed to NCR. Additionally, if customers respond to a negative or unpredictable economic climate by consolidation, it could reduce our base of potential customers. Negative or unpredictable global economic conditions also may have an adverse effect on our customers' ability to obtain financing for the purchase of our products and services from third party financing companies or on the number of payment processing transactions related to our newly acquired JetPay Corporation business, which could negatively impact our operating results.

Business Model. If we are unsuccessful in transforming our business model, our operating results could be negatively impacted. In recent years, we have shifted our business model to become a software and services led enterprise provider, along with cloud and mobile solutions, to help our customers deliver a rich, integrated and personalized experience to consumers across commerce channels in a digital first environment. We expect to increase our capital expenditures and allocate these expenditures primarily to our strategic growth platforms. Our success depends on the return on investment generated from the capital expenditures and our ability to continue to accelerate our shift to recurring software and services revenue streams we identify as strategic growth platforms, while improving the Company's cost structure. Our ability to grow these businesses depends on a number of different factors including, among others, developing, deploying and supporting the next generation of digital first software and cloud solutions for the industries we serve; market acceptance of our new and existing software and cloud solutions; successful entry into the payment processing market; enabling our sales force to use a consultative selling model that better incorporates our comprehensive and new solutions; transforming our services performance, capabilities and coverage to improve efficiency, incorporate remote diagnostic and other technologies and align with and support our new solutions; managing professional services and other costs associated with large solution roll-outs; and integrating, developing and supporting software gained through acquisitions. In addition, development of these businesses may require increased capital and research and development expenses and resource allocation, and while we will seek to have the right level of investment and the right level of resources focused on these opportunities, these costs may

reduce our gross margins and the return on these investments may be lower, or may develop more slowly, than we expect. In addition, we continue to pursue initiatives to expand our customer base by increasing our use of indirect sales channels, and by developing, marketing and selling solutions aimed at the small- to medium-business market. It is not yet certain whether these initiatives will yield the anticipated benefits, or whether our solutions will be compelling and attractive to small- and medium-sized businesses. If we are not successful in growing our higher-margin software and services businesses and expanding our customer base at the rate that we anticipate, we may not meet our growth and gross margin projections or expectations, and operating results could be negatively impacted.

Introduction of New Solutions. If we do not swiftly and successfully develop and introduce new solutions in the competitive, rapidly changing environment in which we do business, our business results will be impacted. The development process for our solutions requires high levels of innovation from our product development teams and suppliers of the components embedded or incorporated in our solutions. We expect to increase our capital expenditures and allocate these expenditures primarily to our strategic growth platforms. In addition, certain of our solutions, including our cloud solutions, may require us to build, lease or expand, and maintain, infrastructure (such as hosting centers) to support them. The development process can be lengthy and costly, and requires us to commit a significant amount of resources to bring our business solutions to market. In addition, our success may be impacted by safety and security technology and industry standards, such as EMV chip technology. We may not be able to anticipate our customers' needs and technological and industry trends accurately, or to complete development of new solutions efficiently. In addition, contract terms, market conditions or

Table of Contents

customer preferences may affect our ability to limit, sunset or end-of-life our older products in a timely or cost-effective fashion. If any of these risks materialize, we may be unable to introduce new solutions into the market on a timely basis, if at all, and our business and operating results could be impacted. Likewise, we sometimes make assurances to customers regarding the operability and specifications of new technologies, and our results could be impacted if we are unable to deliver such technologies, or if such technologies do not perform as planned. Once we have developed new solutions, if we cannot successfully market and sell those solutions, our business and operating results could be negatively impacted.

Data Privacy and Cybersecurity. Cybersecurity and data privacy issues could negatively impact our business. Our products and services, including our cloud and hosted solutions as well as our newly acquired payment processing business, facilitate financial and other transactions for the customers in the industries we serve. As a result, we collect, use, transmit and store certain of the transaction and personal information of our customers and the end-users of our solutions. We also may have access to transaction and personal information of our customers and their customers through or in the course of servicing our products or third party products. Additionally, we collect, use and store personal information of our employees and the personnel of our business partners, such as resellers, suppliers and contractors, in the ordinary course of business. While we have programs and measures in place designed to safeguard this data, and while we have implemented access controls designed to limit the risk of unauthorized use or disclosure by employees and contractors, the techniques used to obtain unauthorized access to this data are complex and changing, and may be difficult to detect for long periods of time. An attack, disruption, intrusion, denial of service, theft or other breach, or an inadvertent act by an employee or contractor, could result in unauthorized access to, or disclosure of, this data, resulting in claims, costs and reputational harm that could negatively affect our operating results. We may also detect, or may receive notice from third parties (including governmental agencies) regarding potential vulnerabilities in our information technology systems, our products, or third party products used in conjunction with our products. Even if these potential vulnerabilities do not result in a data breach, their existence can adversely affect customer confidence and our reputation in the marketplace. To the extent such vulnerabilities require remediation, such remedial measures could require significant resources and may not be implemented before such vulnerabilities are exploited. As the cybersecurity landscape evolves, we may also find it necessary to make significant further investments to protect data and infrastructure.

Like most companies, NCR is regularly the subject of attempted cyberattacks. The Company is not aware of any that have caused adverse consequences material to the Company. Most such attacks are detected and prevented by the Company's various information technology protections, including but not limited to firewalls, intrusion prevention systems, denial of service detection, anomaly based detection, anti-virus/anti-malware, endpoint encryption and detection and response software, Security Information and Event Management (SIEM) system, identity management technology, user behavior analytics, multi-factor authentication and encryption, although there can be no assurance that our protections will always be successful.

The Company has an established relationship with a cybersecurity firm, which it engages in connection with certain threatened incidents. The costs arising from those engagements, which depending on the incident may include both investigatory and remedial efforts, have not to date been material to the Company. The Company also regularly undergoes evaluation of its protections against cybersecurity incidents, including both self-assessments and expert third-party assessments, and it regularly enhances those protections, both in response to specific threats and as part of the Company's efforts to stay current with advances in cybersecurity defense. When the Company experiences a confirmed cybersecurity incident it generally performs root cause analyses and in appropriate instances will implement additional security controls based on those analyses. In 2018, the Company used approximately 9% of its overall IT budget on cybersecurity efforts. There can be no assurance that the Company or its cybersecurity consultant will be able to prevent or remediate all future cybersecurity incidents or that the cost associated with responding to any such incident will not be significant.

The personal information and data that we process and store also is increasingly subject to the data security and data privacy laws of many jurisdictions, which are increasing in complexity and sophistication as data becomes more enriched and technology and the global data protection landscape evolves. These laws may conflict with one another, and many of them are subject to frequent modification and differing interpretations. The laws impose a significant compliance burden and include, for example, the EU's General Data Protection Regulation (GDPR) and the California Consumer Privacy Act, that goes into effect in 2020. Complying with these evolving and varying standards could require significant expense and effort, and could require us to change our business practices or the functionality of our products and services in a manner adverse to our customers and our business. In addition, violations of these laws can result in significant fines, penalties, claims by regulators or other third parties, and damage to our brand and business. The GDPR includes fines of up to 20 million Euros or up to 4% of the annual global revenues of the infringer for failure to comply. The laws also cover the transfer of personal information, including transfers of employee information between us and our subsidiaries, across international borders.

Defects, Errors and Disruptions. Defects, errors, installation difficulties or development delays could expose us to potential liability, harm our reputation and negatively impact our business. Many of our products are sophisticated and complex, and may incorporate third-party hardware and software. Despite testing and quality control, we cannot be certain that defects or errors will not be found in our products. If our products contain undetected defects or errors, or otherwise fail to meet our customers' expectations, we could face

Table of Contents

the loss of customers, liability exposure and additional development costs. If defects or errors delay product installation or make it more difficult, we could experience delays in customer acceptance, or if our products require significant amounts of customer support, it could result in incremental costs to us. In addition, our customers who license and deploy our software may do so in both standard and non-standard configurations in different environments with different computer platforms, system management software and equipment and networking configurations, which may increase the likelihood of technical difficulties. Our products may be integrated with other components or software, and, in the event that there are defects or errors, it may be difficult to determine the origin of such defects or errors. Additionally, damage to, or failure or unavailability of, any significant aspect of our cloud hosting facilities could interrupt the availability of our cloud offerings, which could cause disruption for our customers, and, in turn, their customers, and expose us to liability. If any of these risks materialize, they could result in additional costs and expenses, exposure to liability claims, diversion of technical and other resources to engage in remediation efforts, loss of customers or negative publicity, each of which could negatively impact our business and operating results.

Disruptions in our data center hosting facilities could adversely affect our business. Our software products are increasingly being offered and provided on a cloud or other hosted basis through data centers operated by the Company or third parties in the United States and other countries. In addition, certain of the applications and data that we use in our services offerings and our operations may be hosted or stored at such facilities. These facilities may be vulnerable to natural disasters, telecommunications failures and similar events, or to intentional acts of misconduct, such as security breaches or attacks. The occurrence of any of these events or acts, or any other unanticipated problems, at these facilities could result in damage to or the unavailability of these cloud hosting facilities. Such damage or unavailability could, despite existing disaster recovery and business continuity arrangements, interrupt the availability of our cloud offerings for our customers. We have from time to time experienced such interruptions and they may occur in the future. In addition, any such damage or unavailability could interrupt the availability of applications or data necessary to provide services or conduct critical operations. Interruptions in the availability of our cloud offerings or our ability to service our customers could result in the failure to meet contracted up-time or service levels, which could cause us to issue credits or pay penalties, or cause customers to terminate or not renew subscriptions. Interruptions could also expose us to liability claims, negative publicity and the need to engage in costly remediation efforts, any of which could impact our business and reduce our revenue.

Competition. If we do not compete effectively within the technology industry, we will not be successful. We operate in the intensely competitive technology industry. This industry is characterized by rapidly changing technology, disruptive technological innovation, evolving industry standards, frequent new product introductions, price and cost reductions, and increasingly greater commoditization of products making differentiation difficult. Our competitors include other large companies in the information technology industry, such as Fidelity National Information Services Inc., Fiserv, Inc., First Data Corporation, HP Inc., Diebold Nixdorf, Incorporated, Nautilus Hyosung, ToshibaTec, Oracle Corporation, Fujitsu Limited, Q2 Holdings, Inc. and ACI Worldwide, Inc., most of which have more financial and technical resources, or more widespread distribution and market penetration for their platforms and service offerings, than we do. We also compete with companies in specific industry segments, such as entry-level ATMs, point-of-sale solutions and imaging solutions. In addition, as consumers and customers in the financial, retail and hospitality industry adopt new alternative technologies such as cashless and other streamlined payment services and automated shopping solutions, we may face competition from other technology companies.

Our future competitive performance and market position depend on a number of factors, including our ability to:

- react to competitive product and pricing pressures;

- penetrate and meet the changing competitive requirements and deliverables in developing and emerging markets;

• exploit opportunities in emerging vertical markets, such as travel and telecommunications and technology;

• cross-sell additional products and services to our existing customer base;

• rapidly and continually design, develop and market, or otherwise maintain and introduce innovative solutions and related products and services for our customers that are competitive in the marketplace;

• react on a timely basis to shifts in market demands and technological innovations, including shifts toward the desire of banks and retailers to provide digital first experience to their customers and the use of mobile devices in transactions and payments;

• compete in reverse auctions for new and continuing business;

- reduce costs without creating operating inefficiencies or impairing product or service quality;

Table of Contents

- maintain competitive operating margins;
- improve product and service delivery quality; and
- effectively market and sell all of our diverse solutions.

Our business and operating performance also could be impacted by external competitive pressures, such as consolidation, increasing price erosion and the entry of new competitors and technologies into our existing product and geographic markets. In addition, our customers sometimes finance our product sales through third party financing companies, and in the case of customer default, these financing companies may be forced to resell this equipment at discounted prices, competing with us and impacting our ability to sell incremental units. The impact of these product and pricing pressures could include lower customer satisfaction, decreased demand for our solutions, loss of market share and reduction of operating profits.

Indebtedness and Repurchase Obligations. Our level of indebtedness could limit our financial and operating activities and adversely affect our ability to incur additional debt to fund future needs. At December 31, 2018, we had approximately \$3.18 billion of total indebtedness outstanding. Additionally, at December 31, 2018, we had approximately \$980 million of secured debt available for borrowing under our senior secured credit facility, and approximately \$100 million of secured debt available for borrowing under our trade receivables securitization facility. This level of indebtedness could:

- require us to dedicate a substantial portion of our cash flow to the payment of principal and interest, thereby reducing the funds available for operations and future business opportunities;
- make it more difficult for us to satisfy our obligations with respect to our outstanding senior unsecured notes, including our change in control repurchase obligations;
- limit our ability to borrow additional money if needed for other purposes, including working capital, capital expenditures, debt service requirements, acquisitions and general corporate or other purposes, on satisfactory terms or at all;
- limit our ability to adjust to changing economic, business and competitive conditions;
- place us at a competitive disadvantage with competitors who may have less indebtedness or greater access to financing;
- make us more vulnerable to an increase in interest rates, a downturn in our operating performance or a decline in general economic conditions; and
- make us more susceptible to adverse changes in credit ratings, which could impact our ability to obtain financing in the future and increase the cost of such financing.

If compliance with our debt obligations materially limits our financial or operating activities, or hinders our ability to adapt to changing industry conditions, we may lose market share, our revenue may decline and our operating results may be negatively affected.

The terms of the documents governing our indebtedness include financial and other covenants that could restrict or limit our financial and business operations. Our senior secured credit facility and the indentures for our senior unsecured notes include restrictive covenants that, subject to certain exceptions and qualifications, restrict or limit our ability and the ability of our subsidiaries to, among other things:

- incur additional indebtedness;
- create liens on, sell or otherwise dispose of, our assets;

- engage in certain fundamental corporate changes or changes to our business activities;
- make certain investments or material acquisitions;
- engage in sale-leaseback or hedging transactions;
- repurchase our common stock, pay dividends or make similar distributions on our capital stock;
- repay certain indebtedness;
- engage in certain affiliate transactions; and
- enter into agreements that restrict our ability to create liens, pay dividends or make loan repayments.

Table of Contents

The senior secured credit facility and the indentures also contain certain affirmative covenants, and the senior secured credit facility requires us to comply with financial coverage ratios regarding both our interest expense and our debt relative to our Consolidated EBITDA (as defined in the senior secured credit facility).

These covenants and restrictions could affect our ability to operate our business, and may limit our ability to react to market conditions or take advantage of potential business opportunities as they arise. Additionally, our ability to comply with these covenants may be affected by events beyond our control, including general economic and credit conditions and industry downturns.

In addition, under our trade receivables securitization facility, we are required, among other things, to maintain certain financial tests relating to the three month rolling average ratio of defaults, delinquencies, dilution and days sales outstanding of the receivables pool (as such ratios and tests are described in the agreement governing our trade receivables securitization facility).

If we fail to comply with these covenants and are unable to obtain a waiver or amendment from the applicable lenders, an event of default would result under these agreements and under other agreements containing related cross-default provisions.

- Upon an event of default under the senior secured credit facility, the lenders could, among other things, declare outstanding amounts due and payable, refuse to lend additional amounts to us, or require us to deposit cash collateral in respect of outstanding letters of credit. If we were unable to repay or pay the amounts due, the lenders could, among other things, proceed against the collateral granted to them to secure such indebtedness, which includes certain of our domestic assets and the equity interests of certain of our domestic and foreign subsidiaries.

- Upon an event of default under the indentures, the trustee or holders of our senior unsecured notes could declare all outstanding amounts immediately due and payable.

Upon an event of default under our trade receivables securitization facility, the lenders could, among other things, terminate the facility, declare all capital and other obligations to be immediately due and payable, replace us as servicer, take over receivables lock-box accounts and redirect the collections of domestic accounts receivable from those accounts, and exercise available rights against the domestic accounts receivable pledged by NCR Receivables, LLC.

Despite our current levels of debt, we may still incur substantially more debt, including secured debt, and similar liabilities, which would increase the risks described in these risk factors relating to indebtedness and repurchase obligations. The agreements relating to our debt limit, but do not prohibit, our ability to incur additional debt, and the amount of debt that we could incur could be substantial. In addition, certain types of liabilities are not considered “Indebtedness” under our senior secured credit facility or the indentures governing our senior unsecured notes, and the senior secured credit facility and indentures do not impose any limitation on the amount of liabilities incurred by the subsidiaries, if any, that might be designated as “unrestricted subsidiaries” (as defined in the indentures). Accordingly, we could incur significant additional debt or similar liabilities in the future, including additional debt under our senior secured credit facility, some of which could constitute secured debt. In addition, if we form or acquire any subsidiaries in the future, those subsidiaries also could incur debt or similar liabilities. If new debt or similar liabilities are added to our current debt levels, the related risks that we now face could increase.

Our cash flows may not be sufficient to service our indebtedness, and if we are unable to satisfy our obligations under our indebtedness, we may be required to seek other financing alternatives, which may not be successful. Our ability to make timely payments of principal and interest on our debt obligations depends on our ability to generate positive

cash flows from operations, which is subject to general economic conditions, competitive pressures and certain financial, business and other factors beyond our control. If our cash flows and capital resources are insufficient to make these payments, we may be required to seek additional financing sources, reduce or delay capital expenditures, sell assets or operations or refinance our indebtedness. These actions could have an adverse effect on our business, financial condition and results of operations. In addition, we may not be able to take any of these actions, and, even if successful, these actions may not permit us to meet our scheduled debt service obligations. Our ability to restructure or refinance our outstanding indebtedness will depend on, among other things, the condition of the capital markets and our financial condition at such time. There can be no assurance that we will be able to restructure or refinance any of our indebtedness on commercially reasonable terms or at all. If we cannot make scheduled payments on our debt, we will be in default and the outstanding principal and interest on our debt could be declared to be due and payable, in which case we could be forced into bankruptcy or liquidation or required to substantially restructure or alter our business operations or debt obligations.

Borrowings under our senior secured credit facility and trade receivables securitization facility bear interest at a variable rate, which subjects us to interest rate risk, which could cause our debt service obligations to increase significantly. All of our borrowings under our senior secured credit facility and trade receivables securitization facility are at variable rates of interest and expose us to interest rate risk. If interest rates increase, our debt service obligations on this variable rate indebtedness would increase even though the amount

Table of Contents

borrowed remained the same. Although we may enter into interest rate swaps or similar instruments to reduce interest rate volatility in connection with our variable rate borrowings, we cannot provide assurances that we will be able to do so or that such swaps or instruments will be effective.

We may not be able to raise the funds necessary to finance a required repurchase of our senior unsecured notes or our Series A Convertible Preferred Stock. Upon the occurrence of a change in control under the applicable indenture governing the applicable senior unsecured notes, holders of those notes may require us to repurchase their notes. On any date during the three months commencing on and immediately following March 16, 2024 and the three months commencing on and immediately following every third anniversary of such date, holders of our Series A Convertible Preferred Stock will have the right to require us to repurchase any or all of our outstanding Series A Convertible Preferred Stock. In addition, upon certain change of control events involving the Company, holders of Series A Convertible Preferred Stock can require us, subject to certain exceptions, to repurchase any or all of their Series A Convertible Preferred Stock.

It is possible that we would not have sufficient funds at the time that we are required to make any such purchase of notes or Series A Convertible Preferred Stock (or both). We cannot assure the holders of the senior unsecured notes and Series A Convertible Preferred Stock that we will have sufficient financial resources, or will be able to arrange financing, to pay the repurchase price in cash with respect to any such notes or Series A Convertible Preferred Stock that holders have requested to be repurchased upon a change in control or scheduled redemption. Our failure to repurchase the senior unsecured notes of a series when required would result in an event of default with respect to such notes which could, in turn, constitute a default under the terms of our other indebtedness, if any. If we are unable to repurchase all shares of Series A Convertible Preferred Stock that holders have requested to be purchased, then we are required to pay dividends on the shares not repurchased at a rate equal to 8.0% per annum, accruing daily from such date until the full purchase price, plus all accrued dividends, are paid in full in respect of such shares of Series A Convertible Preferred Stock.

In addition, a change in control may constitute an event of default under our senior secured credit facility and our trade receivables securitization facility that would permit the lenders to accelerate the maturity of the borrowings thereunder and would require us to make a similar change in control offer to holders of our existing senior unsecured notes.

Certain important corporate events, such as leveraged recapitalizations that would increase the level of our indebtedness, may not constitute a change in control under the indentures governing our secured notes or the terms of our Series A Convertible Preferred Stock.

A lowering or withdrawal of the ratings assigned to our debt securities by rating agencies may increase our future borrowing costs and reduce our access to capital. Any rating assigned to our debt could be lowered or withdrawn entirely by a rating agency if, in that rating agency's judgment, future circumstances relating to the basis of the rating, such as adverse changes, so warrant. Any future lowering of our ratings likely would make it more difficult or more expensive for us to obtain additional debt financing.

Operating Results Fluctuations. Our revenue, operating results, and margins could fluctuate for a number of reasons, including those described below:

Seasonality. Our sales are historically seasonal, with lower revenue in the first quarter and higher revenue in the fourth quarter of each year. Such seasonality also causes our working capital cash flow requirements to vary from quarter to quarter depending on the variability in the volume, timing and mix of product sales. In addition, revenue in the third month of each quarter is typically higher than in the first and second months, particularly as our business model shifts

to include more software and cloud solutions. These factors, among other things, may adversely affect our ability to manage working capital, make our forecasting process more difficult and impact our ability to predict financial results accurately.

Income Taxes. We are a United States based multinational company subject to income taxes in the United States and a number of foreign jurisdictions. Our domestic and international tax liabilities are dependent on the distribution of our earnings among these different jurisdictions, and our provision for income taxes and cash tax liability could be adversely affected if the distribution of earnings is higher than expected in jurisdictions with higher statutory tax rates.

On December 22, 2017, the U.S. President signed into law new legislation, referred to as the Tax Cuts and Jobs Act of 2017 ("U.S. Tax Reform"), that significantly revises the Internal Revenue Code of 1986, as amended. Among other things, the new legislation reduces the U.S. corporate income tax rate, subjects interest deductions to potential limitations, alters the expensing of capital expenditures, adopts elements of a territorial tax system, includes a one-time mandatory deemed repatriation tax on accumulated non-U.S. earnings of U.S. entities, and introduces certain anti-base erosion provisions. Since the passing of U.S. Tax Reform, additional guidance in the form of notices and proposed regulations which interpret various aspects of U.S. Tax Reform have been issued. As of the filing of this document, additional guidance is expected. Changes could be made to the proposed regulations as they become finalized, future

Table of Contents

legislation could be enacted, more regulations and notices could be issued, all of which may impact our financial results. We continue to assess the overall impact of the legislation, and there can be no assurances that the additional guidance will have an overall favorable impact on our business, financial condition or effective tax rate. If we are unable to manage the adverse impacts of the legislation, they could have a material effect on our financial condition, results of operations and cash flows.

We recognize deferred tax assets and liabilities based on the differences between the financial statement carrying amounts and the tax basis of assets and liabilities. Our deferred tax assets, net of valuation allowances, totaled approximately \$663 million and \$608 million at December 31, 2018 and 2017, respectively. We regularly review our deferred tax assets for recoverability and establish a valuation allowance if it is more likely than not that some portion or all of a deferred tax asset will not be realized. If we are unable to generate sufficient future taxable income, if there is a material change in the actual effective tax rates or if there is a change to the time period within which the underlying temporary differences become taxable or deductible, then we could be required to increase our valuation allowance against our deferred tax assets, which could result in a material increase in our effective tax rate.

In addition, changes in foreign tax laws or tax rulings could affect our financial position and results of operations. For example, in light of continuing global fiscal challenges, various levels of government and international organizations such as the Organization for Economic Co-operation and Development (OECD) and European Union (EU) are increasingly focused on tax reform and other legislative or regulatory action to increase tax revenue. These tax reform efforts, such as the OECD-led Based Erosion and Profit Sharing project (BEPS), are designed to ensure that corporate entities are taxed on a larger percentage of their earnings. Although some countries have passed tax laws based on findings from the BEPS project, the final nature, timing and extent of any such tax reforms or other legislative or regulatory actions is unpredictable, and it is difficult to assess their overall effect. But, these changes could increase our effective tax rate and adversely impact our financial results.

We are also subject to ongoing audits of our income tax returns in various jurisdictions both in the U.S. and internationally. While we believe that our tax positions will be sustained, the outcomes of such audits could result in the assessment of additional taxes, which could adversely impact our cash flows and financial results.

Foreign Currency. Our revenue and operating income are subject to variability due to the effects of foreign currency fluctuations against the U.S. Dollar. Overall, we have exposure to approximately 50 functional currencies. We pay the majority of expenses attributable to our foreign operations in the functional currency of the country in which such operations are conducted, and in 2018 a significant portion of our revenue was generated in currencies other than the U.S. Dollar. As a result, significant currency fluctuations could adversely affect our results of operations, including sales and gross margins. For example, an increase in the value of the U.S. Dollar relative to foreign currencies could result in lower revenue and increased losses from currency exchange rates. We endeavor to mitigate some of the effects of currency fluctuations with our hedging strategies; however, the volatility of foreign currency exchange rates is dependent on many factors that cannot be forecasted with reliable accuracy and our derivative instruments may not prove effective in reducing our exposures.

Cost/Expense Reductions. Our success in achieving targeted cost and expense reductions through formal restructuring or spend optimization programs, including the spend optimization program we announced in the fourth quarter of 2018 to drive cost savings through operational efficiencies, our continuous improvement programs, our performance improvement programs and other similar programs depends on a number of factors, including our ability to achieve infrastructure rationalizations, drive lower component and product development costs, improve supply chain efficiencies, utilize next-generation technologies, simplify and rationalize product portfolios, and optimize the efficiency of our customer services and professional services consulting resources. If we do not successfully execute on these initiatives or if we experience delays in completing the implementation of these initiatives, our results of

operations or financial condition could be adversely affected.

Manufacturing. At December 31, 2018, NCR leveraged a network of internal and third party partner facilities across the globe to manufacture its products:

• ATMs are manufactured in NCR facilities located in Columbus, Georgia, USA; Manaus, Brazil; Budapest, Hungary; and Chennai, India and partner facilities located in Chihuahua, Mexico.

• Self-checkout solutions are manufactured in NCR facilities located in Budapest, Hungary and partner facilities located in Chihuahua, Mexico and Xiamen, China.

• Kiosk solutions are manufactured in NCR facilities located in Budapest, Hungary; Manaus, Brazil; and Chennai, India and partner facilities in Buford, Georgia, USA.

• POS/Display terminals are manufactured in NCR facilities located in Budapest, Hungary and partner facilities located in Guadalajara, Mexico and Xiamen, China.

Additionally, at December 31, 2018, NCR outsourced the manufacturing of certain printers, bar code scanners and various other retail peripherals such as keyboards and cash drawers.

Table of Contents

On April 23, 2018, we announced our intention to streamline our manufacturing operations by closing two manufacturing plants in the Columbus, Georgia area and another in Beijing, China, and to move the manufacturing operations at those plants to other existing NCR facilities and to current third party suppliers in order to shift the cost structure to more variable model to adjust with changes in demand.

Additionally, in 2018, we experienced supply constraints and product quality challenges, which impacted the timely delivery of hardware products to our customers. If these challenges continue or we develop or experience other problems relating to product quality or on-time delivery to customers that we are unable to quickly manage and resolve, whether due to the geographical diversity of our manufacturing base, the use of contract or outsourced manufacturing, or otherwise, we could experience business interruption that could negatively impact our business and operating results.

Contractual Obligations for Professional Services. Our contracts for professional services consulting work may contemplate that services will be performed over multiple periods, especially in connection with large solution roll-outs. Our profitability under those contracts is largely a function of performing our contractual obligations within the estimated costs and time periods specified. If we exceed these estimated costs or cannot otherwise complete the contracted services within the specified periods, our profitability related to these contracts could be negatively impacted. In addition, if we are unable to maintain appropriate utilization rates for our consultants, we may not be able to sustain profitability on these contracts.

Acquisitions, Divestitures and Alliances. As we selectively acquire and divest technologies, products and businesses and we begin to include or exclude, as the case may be, the financial results related to these transactions, our operating results could fluctuate materially, depending on the size, nature, structure and timing of the transactions.

Underfunded Pension Obligation. At December 31, 2018, our obligation for benefits under our pension plans was \$2,855 million and our pension plan assets totaled \$2,222 million, which resulted in an underfunded pension obligation of \$633 million. While we rebalanced our U.S. and international plan assets in order to reduce volatility and made several discretionary contributions to our pension plans, our remaining underfunded pension obligation continues to require ongoing cash contributions. Our underfunded pension obligation also may be affected by future transfers and settlements relating to our international pension plans.

In addition, certain of the plan assets remain subject to financial market risk, and our actuarial and other assumptions underlying our expected future benefit payments, long-term expected rate of return and future funding expectations for our plans depend on, among other things, interest rate levels and trends and capital market expectations. Further volatility in the performance of financial markets, changes in any of these actuarial assumptions (including those described in our “Critical Accounting Policies and Estimates” section of the “Management's Discussion and Analysis of Financial Condition and Results of Operations” included in Item 7 of Part II of this Report) or changes in regulations regarding funding requirements could require material increases to our expected cash contributions to our pension plans in future years.

See the “Effects of Pension, Postemployment and Postretirement Benefit Plans” and “Financial Condition, Liquidity And Capital Resources” sections of the “Management's Discussion and Analysis of Financial Condition and Results of Operations” included in Item 7 of Part II of this Report and Note 9, “Employee Benefit Plans” in the Notes to the Consolidated Financial Statements included in Item 8 of Part II of this Report for further information regarding the funded status of our pension plans and potential future cash contributions.

Stock-based Compensation. Similar to other companies, we use stock awards as a form of compensation for certain employees and non-employee directors. All stock-based awards are required to be recognized in our financial

statements based on their fair values. The amount recognized for stock compensation expense could vary depending on a number of assumptions or changes that may occur. For example, assumptions such as the risk-free rate, expected holding period and expected volatility that drive our valuation model could change. Other examples that could have an impact include changes in the mix and type of awards, changes in our compensation plans, changes in our tax rate, changes in our forfeiture rate, differences in actual results compared to management's estimates for performance-based awards or an unusually high amount of expirations of stock awards.

Changes in Accounting Principles. We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States. These principles are subject to interpretation by the SEC and various bodies formed to create and interpret appropriate accounting principles and guidance. Changes in accounting principles may have an adverse effect on our financial results, as well as our processes and related controls, and may retroactively affect previously reported results. For additional information regarding updated accounting principles and standards, including the new revenue recognition standard, see Item 7 of Part II of this Report and Note 1, "Basis of Presentation and Significant Accounting Policies" in the Notes to the Consolidated Financial Statements included in Item 8 of Part II of this Report.

Table of Contents

Activist Stockholders. While we seek to actively engage with stockholders and consider their views on business and strategy, we could be subject to actions or proposals from stockholders or others that do not align with our business strategies or the interests of our other stockholders. Responding to these stockholders could be costly and time-consuming, disrupt our business and operations, and divert the attention of our Board of Directors and senior management. Uncertainties associated with such activities could interfere with our ability to effectively execute our strategic plan, impact customer retention and long-term growth, and limit our ability to hire and retain personnel. In addition, actions of these stockholders may cause periods of fluctuation in our stock price based on temporary or speculative market perceptions or other factors that do not necessarily reflect the underlying fundamentals and prospects of our business.

Reliance on Third Parties. If third party suppliers upon which we rely are not able to fulfill our needs, our ability to bring our products to market in a timely fashion could be affected. There are a number of vendors providing the services and producing the parts and components that we utilize in or in connection with our products. However, there are some services and components that are licensed or purchased from single sources due to price, quality, technology, functionality or other reasons. For example, we depend on transaction processing services from Accenture, computer chips and microprocessors from Intel and operating systems from Microsoft. Certain parts and components used in the manufacturing of our ATMs and the delivery of many of our retail solutions are also supplied by single sources. In addition, there are a number of key suppliers for our businesses that provide us with critical products for our solutions. If we were unable to secure the necessary services or maintain current demand as we experienced in 2018, including contract manufacturing, parts, software, components or products from a particular vendor, and we had to find an alternative supplier, our new and existing product shipments and solution deliveries, or the provision of contracted services, could be delayed, impacting our business and operating results.

We have, from time to time, formed alliances with third parties that have complementary products, software, services and skills. These alliances represent many different types of relationships, such as outsourcing arrangements to manufacture hardware and subcontract agreements with third parties to perform services and provide products and software to our customers in connection with our solutions. For example, we rely on Jabil Inc. to provide contract manufacturing services for our automated teller machines and self-service checkout solutions, primarily for our customers in the Americas. We also rely on third parties for cash replenishment services for our ATM products. These alliances introduce risks that we cannot control, such as nonperformance by third parties and difficulties with or delays in integrating elements provided by third parties into our solutions. Lack of information technology infrastructure, shortages in business capitalization, and manual processes and data integrity issues, particularly with smaller suppliers can also create product time delays, inventory and invoicing problems, and staging delays, as well as other operating issues. The failure of third parties to provide high-quality products or services that conform to required specifications or contractual arrangements could impair the delivery of our solutions on a timely basis, create exposure for non-compliance with our contractual commitments to our customers and impact our business and operating results. Also, some of these third parties have access to confidential NCR and customer data, personal data, and sensitive data, the integrity and security of which are of significant importance to the Company.

Work Environment. Continuous improvement, customer experience, restructuring and cost reduction initiatives could negatively impact productivity and business results. In the past, we have undertaken restructuring plans, and, in addition, as part of our ongoing efforts to optimize our cost structure, from time to time, we shift and realign our internal organizational structure and resources. For example, on April 23, 2018, we announced our intentions to streamline our manufacturing operations by closing two manufacturing plants in the Columbus, Georgia area and another in Beijing, China, and to move the manufacturing operations at those plants to other existing NCR facilities and to current third party suppliers. These activities could temporarily result in reduced productivity levels. If we are not able to timely execute on these initiatives, or if the costs to complete these initiatives is higher than anticipated, our results of operations or financial condition could be adversely affected. In addition to these initiatives, we have

initiatives to improve the experience of our customers, invest in growing identified strategic growth platforms, and shift the mix of revenue in our business to recurring software and services. We typically have many such initiatives underway. If we are not successful in implementing and managing these various initiatives and minimizing any resulting loss in productivity, we may not be able to achieve targeted cost savings or productivity gains, and our business and operating results could be negatively impacted.

On January 8, 2018, we opened our new world headquarters in Atlanta, Georgia, and have relocated our headquarters operations to this facility. From time to time we may undertake similar projects with respect to our office, manufacturing or other facilities. Implementation of relocation plans such as these could result in business disruption due to a lack of business continuity, which, among other things, could have a negative impact on our productivity and business and operating results.

If we do not retain key employees, or attract quality new and replacement employees, we may not be able to meet our business objectives. Our employees are vital to our success, including the successful transformation of the Company into a software and solutions driven business. Therefore, our ability to retain our key business leaders and our highly skilled software development, technical, sales, consulting and other key personnel, including key personnel of acquired businesses, is critical. These key employees may decide to leave NCR for other opportunities, or may be unavailable for health or other reasons. In addition, as our business model evolves, we may need to attract employees with different skill sets, experience and attributes to support that evolution. If we are unable to retain our key personnel,

Table of Contents

or we are unable to attract highly qualified new and replacement employees by offering competitive compensation, secure work environments and leadership opportunities now and in the future, our business and operating results could be negatively impacted. In addition, a failure to ensure the effective and timely transfer of knowledge and a smooth transition of key employees, including, among others, our Chief Executive Officer, Chief Operating Officer, Chief Financial Officer, Chief Technology Officer, Chief Human Resources Officer and General Counsel, could hinder business continuity, personnel retention and operational execution, which, among other things, could have a negative impact on our productivity and business and operating results. Uncertainties or delays associated with the transition of key business leaders could also cause fluctuation in our stock price.

Our ability to effectively manage our business could be negatively impacted if we do not invest in and maintain reliable technology infrastructure and information systems. It is periodically necessary to add to, replace, upgrade or modify our technology infrastructure and internal information systems. If we are unable to expand, replace, upgrade or modify such systems in a timely and cost-effective manner, especially in light of demands on our information technology resources, our ability to capture and process financial transactions and, therefore, our financial condition, results of operations, or ability to comply with legal and regulatory reporting obligations, may be negatively impacted.

Series A Convertible Preferred Stock. The issuance of shares of our Series A Convertible Preferred Stock reduces the relative voting power of holders of our common stock, and the conversion and sale of those shares would dilute the ownership of such holders and may adversely affect the market price of our common stock. As of December 31, 2018, 0.9 million shares of our Series A Convertible Preferred Stock were outstanding, representing approximately 20% of our outstanding common stock, including the Series A Convertible Preferred Stock on an as-converted basis. Holders of Series A Convertible Preferred Stock are entitled to a cumulative dividend at the rate of 5.5% per annum, payable quarterly in arrears. The dividends are to be paid in-kind, through the issuance of additional shares of Series A Convertible Preferred Stock, for the first sixteen dividend payment dates, and thereafter in cash or in-kind at our option. If we fail to timely declare and pay a dividend, the dividend rate will increase to 8.0% per annum until such time as all accrued but unpaid dividends have been paid in full.

As holders of our Series A Convertible Preferred Stock are entitled to vote, on an as-converted basis, together with holders of our common stock on all matters submitted to a vote of the holders of our common stock, the Series A Convertible Preferred Stock, and the subsequent issuance of additional shares of Series A Convertible Preferred Stock through the payment of in-kind dividends, effectively reduces the relative voting power of the holders of our common stock.

In addition, the conversion of the Series A Convertible Preferred Stock to common stock would dilute the ownership interest of existing holders of our common stock, and any sales in the public market of the common stock issuable upon conversion of the Series A Convertible Preferred Stock would increase the number of shares of our common stock available for public trading, and could adversely affect prevailing market prices of our common stock. Under a customary registration rights agreement, in March 2016 we registered for resale the shares of Series A Convertible Preferred Stock, and the shares of common stock issuable upon conversion of the Series A Convertible Preferred Stock, and in March 2017, entities affiliated with The Blackstone Group L.P. (which we refer to as the Blackstone Purchasers) offered for sale 342,000 shares of Series A Convertible Preferred Stock in an underwritten public offering. Further sales by Blackstone of shares of our Series A Convertible Preferred Stock, or common stock issuable upon conversion of the Series A Convertible Preferred Stock, in the public market, or the perception that such sales might occur, could have an adverse effect on the price of our common stock.

The Blackstone Purchasers and the other holders of our Series A Convertible Preferred Stock may exercise influence over us. As of December 31, 2018, the outstanding shares of our Series A Convertible Preferred Stock represented approximately 20% of our outstanding common stock, including the Series A Convertible Preferred Stock on an

as-converted basis. The terms of the Series A Convertible Preferred Stock require the approval of a majority of our Series A Convertible Preferred Stock by a separate class vote for us to:

• amend our organizational documents in a manner that would have an adverse effect on the Series A Convertible Preferred Stock; or

• issue securities that are senior to, or equal in priority with, the Series A Convertible Preferred Stock.

In addition, our November 2015 Investment Agreement with Blackstone (the Investment Agreement), and the terms of the Series A Convertible Preferred Stock, grant the Blackstone Purchasers certain rights to designate directors to serve on our Board, which directors are elected by a separate class vote of the holders of the Series A Convertible Preferred Stock. For so long as the Blackstone Purchasers beneficially own shares of Series A Convertible Preferred Stock (and/or shares of common stock issued upon conversion of Series A Convertible Preferred Stock) that represent, on an as-converted basis, at least 50% of the Blackstone Purchasers' initial shares of Series A Convertible Preferred Stock on an as-converted basis, the Blackstone Purchasers have the right to designate two directors for election

Table of Contents

to our Board. For so long as the Blackstone Purchasers beneficially own shares of Series A Convertible Preferred Stock (and/or shares of common stock issued upon conversion of Series A Convertible Preferred Stock) that represent, on an as-converted basis, at least 25% but less than 50% of Blackstone's initial shares of Series A Convertible Preferred Stock on an as-converted basis, the Blackstone Purchasers will have the right to designate one director for election to our Board.

The directors designated by the Blackstone Purchasers also are entitled to serve on committees of our Board, subject to applicable law and stock exchange rules. Notwithstanding the fact that all directors will be subject to fiduciary duties to us and to applicable law, the interests of the directors designated by the Blackstone Purchasers and elected by the holders of our Series A Convertible Preferred Stock may differ from the interests of our security holders as a whole or of our other directors.

The Investment Agreement also imposes a number of affirmative and negative covenants on us, and gives the Blackstone Purchasers a consent right with respect to certain actions taken by us, including:

- entering into material transactions with related parties, or repurchasing or redeeming shares of common stock from related parties, subject to certain exceptions; and

- increasing or decreasing the maximum number of directors on our Board to more than eleven persons or to such number as would require the resignation of one of the directors nominated by Blackstone.

As a result, the holders of our Series A Convertible Preferred Stock, and in particular, the Blackstone Purchasers, have the ability to influence the outcome of any matter submitted for the vote of the holders of our common stock. Blackstone and its affiliates are in the business of making or advising on investments in companies, including businesses that may directly or indirectly compete with certain portions of our business, and they may have interests that diverge from, or even conflict with, those of our other stockholders. They may also pursue acquisition opportunities that may be complementary to our business, and, as a result, those acquisition opportunities may not be available to us.

Our Series A Convertible Preferred Stock has rights, preferences and privileges that are not held by, and are preferential to, the rights of our common stockholders, which could adversely affect our liquidity and financial condition, and may result in the interests of the holders of our Series A Convertible Preferred Stock, including the Blackstone Purchasers, differing from those of our common stockholders. The holders of our Series A Convertible Preferred Stock have the right to receive a liquidation preference entitling them to be paid out of our assets available for distribution to stockholders before any payment may be made to holders of any other class or series of capital stock, an amount equal to the greater of (a) 100% of the liquidation preference thereof plus all accrued dividends or (b) the amount that such holder would have been entitled to receive upon our liquidation, dissolution and winding up if all outstanding shares of Series A Convertible Preferred Stock had been converted into common stock immediately prior to such liquidation, dissolution or winding up.

In addition, dividends on the Series A Convertible Preferred Stock accrue and are cumulative at the rate of 5.5% per annum, payable quarterly in arrears. If we fail to timely declare and pay a dividend, the dividend rate will increase to 8.0% per annum until such time as all accrued but unpaid dividends have been paid in full. The dividends are to be paid in kind, through the issuance of additional shares of Series A Convertible Preferred Stock, for the first sixteen dividend payment dates, and thereafter in cash or in-kind at our option.

The holders of our Series A Convertible Preferred Stock also have certain redemption rights or put rights, including the right to require us to repurchase all or any portion of the Series A Convertible Preferred Stock on any date during

the three months commencing on and immediately following March 16, 2024 and the three months commencing on and immediately following every third anniversary of such date, at 100% of the liquidation preference thereof plus all accrued but unpaid dividends, and the right, subject to certain exceptions, to require us to repurchase all or any portion of the Series A Convertible Preferred Stock upon certain change of control events at the greater of (a) 100% of the liquidation preference thereof plus all accrued but unpaid dividends and (b) the consideration the holders would have received if they had converted their shares of Series A Convertible Preferred Stock into common stock immediately prior to the change of control event.

These dividend and share repurchase obligations could impact our liquidity and reduce the amount of cash flows available for working capital, capital expenditures, growth opportunities, acquisitions, and other general corporate purposes. Our obligations to the holders of Series A Convertible Preferred Stock could also limit our ability to obtain additional financing or increase our borrowing costs, which could have an adverse effect on our financial condition. The preferential rights could also result in divergent interests between the holders of our Series A Convertible Preferred Stock and holders of our common stock.

Table of Contents

Multinational Operations. Our multinational operations, including in new and emerging markets, expose us to business and legal risks. For the years ended December 31, 2018 and 2017, the percentage of our revenue from outside of the United States was 52% and 50%, respectively, and we expect our percentage of revenue generated outside the United States to continue to be significant. In addition, we continue to seek to further penetrate existing international markets, and to identify opportunities to enter into or expand our presence in developing and emerging markets. While we believe that our geographic diversity may help to mitigate some risks associated with geographic concentrations of operations, our ability to manufacture and sell our solutions internationally, including in new and emerging markets, is subject to risks, which include, among others:

- the impact of ongoing and future economic and credit conditions on the stability of national and regional economies and industries within those economies;
- political conditions and local regulations that could adversely affect demand for our solutions, our ability to access funds and resources, or our ability to sell products in these markets;
- the impact of a downturn in the global economy, or in regional economies, on demand for our products;
- currency exchange rate fluctuations that could result in lower demand for our products as well as generate currency translation losses;
- limited availability of local currencies to pay vendors, employees and third parties and to distribute funds outside of the country;
- changes to global or regional trade agreements that could limit our ability to sell products in these markets;
- the imposition of import or export tariffs, taxes, trade policies or import and export controls that could increase the expense of, or limit demand for our products;
- changes to and compliance with a variety of laws and regulations that may increase our cost of doing business or otherwise prevent us from effectively competing internationally;
- government uncertainty or limitations on the ability to enforce legal rights and remedies, including as a result of new, or changes to, laws and regulations;
- reduced protection for intellectual property rights in certain countries;
- implementing and managing systems, procedures and controls to monitor our operations in foreign markets;
- changing competitive requirements and deliverables in developing and emerging markets;
- longer collection cycles and the financial viability and reliability of contracting partners and customers;
- managing a geographically dispersed workforce, work stoppages and other labor conditions or issues;
- disruptions in transportation and shipping infrastructure; and
- the impact of civil unrest relating to war and terrorist activity on the economy or markets in general, or on our ability, or that of our suppliers, to meet commitments.

In addition, as a result of our revenue generated outside of the United States, the amount of cash and cash equivalents that is held by our foreign subsidiaries continues to be significant. U.S. Tax Reform includes a one-time mandatory deemed repatriation tax ("repatriation tax") on accumulated earnings of our foreign subsidiaries. Also, under U.S. Tax Reform, the future earnings accumulated after December 31, 2017 held by our foreign subsidiaries will be currently taxed in the U.S., and as such, distributions of earnings to the U.S. no longer generates additional negative U.S. income tax consequences. However, any distributions of earnings from foreign subsidiaries may be subject to foreign withholding taxes, which would reduce the amount of cash and cash equivalents that are available for our use.

Acquisitions, Divestitures and Alliances. If we do not successfully integrate acquisitions or effectively manage alliance activities, we may not drive future growth. As part of our overall solutions strategy, we have made, and intend to continue to make, investments in companies, products, services and technologies, either through acquisitions, investments, joint ventures or strategic alliances. Acquisitions and alliance activities inherently involve risks. The risks we may encounter include those associated with:

- assimilating and integrating different business operations, corporate cultures, personnel, infrastructures (such as data centers) and technologies or products acquired or licensed;
- the potential for unknown liabilities within the acquired or combined business; and
- the possibility of conflict with joint venture or alliance partners regarding strategic direction, prioritization of objectives and goals, governance matters or operations.

Table of Contents

Further, we may make acquisitions and investments in order to acquire or obtain access to new technology or products that expand our offerings. There is risk that the new technology or products, including but not limited to entry into the payment processing market, may not perform as anticipated and may not meet estimated growth projections or expectations, or investment recipients may not successfully execute their business plans. There is also risk that key employees of an acquired business may not remain with us as long as expected. In the event that these risks materialize, we may not be able to fully realize the benefit of our investments, and our operating results could be adversely affected. An acquisition or alliance, and the integration of an acquired business, may also disrupt our ongoing business or we may not be able to successfully incorporate acquired products, services or technologies into our solutions and maintain quality. Further, we may not achieve the projected synergies once we have integrated the business into our operations, which may lead to additional costs not anticipated at the time of acquisition.

Circumstances associated with divestitures could adversely affect our results of operations and financial condition. We continue to evaluate the strategic fit of our other businesses and products and may decide to sell a business or product based on such an evaluation. Despite a decision to divest a business or product, we may encounter difficulty in finding buyers or executing alternative exit strategies at acceptable prices and terms and in a timely manner. In addition, prospective buyers may have difficulty obtaining financing. Divestitures could involve additional risks, including:

- difficulties in the separation of operations, services, products and personnel;
- the need to provide significant ongoing post-closing transition support to a buyer;
- the diversion of management's attention from other business concerns;
- the retention of certain current or future liabilities in order to induce a buyer to complete a divestiture;
- the obligation to indemnify or reimburse a buyer for certain past liabilities of a divested business;
- the disruption of our business; and
- the potential loss of key employees.

We may not be successful in managing these or any other significant risks that we may encounter in divesting a business or product, which could have an adverse effect on our business.

Environmental. Our historical and ongoing manufacturing activities subject us to environmental exposures. Our facilities and operations are subject to a wide range of environmental protection laws, and we have investigatory and remedial activities underway at a number of facilities that we currently own or operate, or formerly owned or operated, to comply, or to determine compliance, with such laws. In addition, our products are subject to environmental laws in a number of jurisdictions. Given the uncertainties inherent in such activities, there can be no assurances that the costs required to comply with applicable environmental laws will not impact future operating results. We have also been identified as a potentially responsible party in connection with certain environmental matters, including the Fox River and Kalamazoo River matters, as further described in Note 10, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report; in "Environmental Matters" within Item 1 of Part I of this Report; and in "Environmental and Legal Contingencies" within the "Critical Accounting Policies and Estimates" section of "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in Item 7 of Part II of this Report, and we incorporate such disclosures by reference and make them a part of this discussion of risk factors.

Intellectual Property. Our continuing ability to be a leading technology and services solutions provider could be negatively affected if we do not protect intellectual property that drives innovation. It is critical to our continued development of leading technologies that we are able to protect and enhance our proprietary rights in our intellectual property through patent, copyright, trademark and trade secret laws. These efforts include protection of the products and the application, diagnostic and other software we develop. To the extent we are not successful in protecting our proprietary rights, our business could be adversely impacted. Also, many of our offerings rely on technologies

developed by others, and if we are unable to continue to obtain licenses for such technologies, our business could be adversely impacted. From time to time, we receive notices from third parties regarding patent and other intellectual property claims. Whether such claims have merit, they may require significant resources to defend. If an infringement claim is successful and we are required to pay damages, or we are unable to license the infringed technology or to substitute similar non-infringing technology, our business could be adversely affected.

Internal Controls. If we do not maintain effective internal controls, accounting policies, practices, and information systems necessary to ensure reliable reporting of our results, our ability to comply with our legal obligations could be negatively affected. Our internal controls, accounting policies and practices, and internal information systems enable us to capture and process transactions in a timely and accurate manner in compliance with applicable accounting standards, laws and regulations, taxation requirements and federal securities laws and regulations. Our internal controls and policies are being closely monitored by management as we continue to

Table of Contents

implement a worldwide Enterprise Resource Planning (ERP) system. While we believe these controls, policies, practices and systems are adequate to ensure data integrity, unanticipated and unauthorized actions of employees or contractors (both domestic and international), temporary lapses in internal controls due to shortfalls in transition planning and oversight, or resource constraints, could lead to improprieties and undetected errors that could impact our financial condition, results of operations, or compliance with legal obligations. Moreover, while management has concluded that the Company's internal control over financial reporting was effective as of December 31, 2018 (as set forth in "Management's Report on Internal Control over Financial Reporting" included in Item 9A of Part II of this Report), due to their inherent limitations, such controls may not prevent or detect misstatements in our reported financial statements. Such limitations include, among other things, the potential for human error or circumvention of controls. Further, the Company's internal control over financial reporting is subject to the risk that controls may become inadequate because of a failure to remediate control deficiencies, changes in conditions or a deterioration of the degree of compliance with established policies and procedures.

Contingencies. We face uncertainties with regard to regulations, lawsuits and other related matters. In the normal course of business, we are subject to proceedings, lawsuits, claims and other matters, including, for example, those that relate to the environment, health and safety, labor and employment, employee benefits, import/export compliance, intellectual property, data privacy and security, product liability, commercial disputes and regulatory compliance, among others. Because such matters are subject to many uncertainties, their outcomes are not predictable and we must make certain estimates and assumptions in our financial statements. While we believe that amounts provided in our Consolidated Financial Statements with respect to such matters are currently adequate in light of the probable and estimable liabilities, there can be no assurances that the amounts required to satisfy alleged liabilities from such matters will not impact future operating results. Additionally, we are subject to diverse and complex laws and regulations, including those relating to corporate governance, public disclosure and reporting, environmental safety and the discharge of materials into the environment, product safety, import and export compliance, data privacy and security, antitrust and competition, government contracting, anti-corruption, and labor and human resources, which are rapidly changing and subject to many possible changes in the future. Compliance with these laws and regulations, including changes in accounting standards, taxation requirements, and federal securities laws among others, may create a substantial burden on us, and substantially increase costs to our organization or could have an impact on our future operating results.

Additionally, doing business on a worldwide basis requires us and our subsidiaries to comply with the laws and regulations of the U.S. government and various international jurisdictions. For example, our international operations are subject to U.S. and foreign anti-corruption laws and regulations, such as the Foreign Corrupt Practices Act (FCPA), which generally prohibits U.S. companies or agents acting on behalf of such companies from making improper payments to foreign officials for the purpose of obtaining or keeping business. Our international operations are also subject to economic sanction programs administered by the U.S. Treasury Department's Office of Foreign Assets Control (OFAC). If we are not in compliance with such laws and regulations, we may be subject to criminal and civil penalties, which may cause harm to our reputation and to our brand and could have an adverse effect on our business, financial condition and results of operations.

Item 1B. UNRESOLVED STAFF COMMENTS

None.

Item 2. PROPERTIES

As of December 31, 2018, NCR operated 208 facilities consisting of approximately 5.6 million square feet in 61 countries throughout the world, which are generally used by all of NCR's operating segments. On a square footage

basis, 14% of these facilities are owned and 86% are leased. Within the total facility portfolio, NCR operates 14 research and development and manufacturing facilities totaling 1.4 million square feet, 86% of which is leased. The remaining 4.2 million square feet of space includes office, repair, and warehousing space and other miscellaneous sites, and is 86% leased. NCR also owns 7 land parcels totaling 2.6 million square feet in 2 countries.

NCR is headquartered in Atlanta, Georgia, USA. Our address at our corporate headquarters is 864 Spring Street Northwest, Atlanta Georgia, 30308, USA.

Item 3. LEGAL PROCEEDINGS

Information regarding legal proceedings is included in Item 8 of Part II of this Report as part of Note 10, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements and is incorporated herein by reference.

Item 4. MINE SAFETY DISCLOSURES

Table of Contents

Not applicable.

22

Table of Contents

PART II

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

Market Information

NCR common stock is listed on the New York Stock Exchange (NYSE) and trades under the symbol "NCR". There were approximately 85,703 holders of NCR common stock as of February 15, 2019.

Dividends

Historically NCR has not paid cash dividends and does not anticipate the payment of cash dividends on NCR common stock in the immediate future. The declaration of dividends is restricted under our senior secured credit facility and the terms of the indentures for our senior unsecured notes, and would be further subject to the discretion of NCR's Board of Directors.

Stock Performance Graph

The following graph compares the relative investment performance of NCR stock, the Standard & Poor's MidCap 400 Stock Index, Standard & Poor's 500 Information Technology Sector and the Standard & Poor's 500 Stock Index. This graph covers the five-year period from December 31, 2013 through December 31, 2018.

Company / Index	2014	2015	2016	2017	2018
NCR Corporation	\$86	\$72	\$119	\$100	\$68
S&P 500 Stock Index	\$114	\$115	\$129	\$157	\$150
S&P 500 Information Technology Sector	\$120	\$127	\$145	\$201	\$201
S&P MidCap 400 Stock Index	\$110	\$107	\$130	\$151	\$134

(1)In each case, assumes a \$100 investment on December 31, 2013, and reinvestment of all dividends, if any.

Table of Contents

Purchase of Company Common Stock

On October 19, 2016, the Board approved a share repurchase program, with no expiration from the date of authorization, for the systematic repurchase of the Company's common stock to offset the dilutive effects of the Company's employee stock purchase plan, equity awards and in-kind dividends on the Company's Series A Convertible Preferred Stock. Availability under this program accrues quarterly based on the average value of dilutive issuances during the quarter.

On March 12, 2017, the Board approved a second share repurchase program that provides for the repurchase of up to \$300 million of the Company's common stock.

No shares were repurchased under these programs during the three months ended December 31, 2018.

As of December 31, 2018, \$290 million was available for repurchases under the March 2017 program, and approximately \$323 million was available for repurchases under the October 2016 dilution offset program. The timing and amount of repurchases under these programs depend upon market conditions and may be made from time to time in open market purchases, privately negotiated transactions, accelerated stock repurchase programs, issuer self-tender offers or otherwise. The repurchases will be made in compliance with applicable securities laws and may be discontinued at any time.

The Company occasionally purchases vested restricted stock or exercised stock options at the current market price to cover withholding taxes. For the three months ended December 31, 2018, 239,846 shares of vested restricted stock were purchased at an average price of \$25.86 per share.

The Company's ability to repurchase its common stock is restricted under the Company's senior secured credit facility and terms of the indentures for the Company's senior unsecured notes, which prohibit certain share repurchases, including during the occurrence of an event of default, and establish limits on the amount that the Company is permitted to allocate to share repurchases and other restricted payments. The limitations are calculated using formulas based generally on 50% of the Company's consolidated net income for the period beginning in the third quarter of 2012 through the end of the most recently ended fiscal quarter, subject to certain other adjustments and deductions, with certain prescribed minimums. These formulas are described in greater detail in the Company's senior secured credit facility and the indentures for the Company's senior unsecured notes, each of which is filed with the SEC.

Table of Contents

Item 6. SELECTED FINANCIAL DATA

In millions, except per share and employee and contractor amounts

For the years ended December 31

Continuing Operations ^(a,d)

	2018	2017	2016	2015	2014
Revenue	\$6,405	\$6,516	\$6,543	\$6,373	\$6,591
Income from operations	\$191	\$691	\$674	\$571	\$477
Interest expense	\$(168)	\$(163)	\$(170)	\$(173)	\$(181)
Income tax expense (benefit) ^(b)	\$73	\$242	\$92	\$55	\$(48)
Income (loss) from continuing operations attributable to NCR common stockholders	\$(36)	\$237	\$283	\$(154)	\$181
(Loss) income from discontinued operations, net of tax	\$(52)	\$(5)	\$(13)	\$(24)	\$10
Basic earnings (loss) per common share attributable to NCR common stockholders:					
From continuing operations ^(a,d)	\$(0.72)	\$1.05	\$1.86	\$(0.94)	\$1.08
From discontinued operations	\$(0.44)	\$(0.04)	\$(0.10)	\$(0.15)	\$0.06
Total basic earnings (loss) per common share	\$(1.16)	\$1.01	\$1.76	\$(1.09)	\$1.14
Diluted earnings (loss) per common share attributable to NCR common stockholders: ^(c)					
From continuing operations ^(a,d)	\$(0.72)	\$1.01	\$1.80	\$(0.94)	\$1.06
From discontinued operations	\$(0.44)	\$(0.04)	\$(0.09)	\$(0.15)	\$0.06
Total diluted earnings (loss) per common share	\$(1.16)	\$0.97	\$1.71	\$(1.09)	\$1.12
Cash dividends per share	\$—	\$—	\$—	\$—	\$—
As of December 31					
Total assets	\$7,761	\$7,654	\$7,673	\$7,635	\$8,566
Total debt	\$3,165	\$2,991	\$3,051	\$3,252	\$3,618
Series A convertible preferred stock	\$859	\$810	\$847	\$798	\$—
Total NCR stockholders' equity	\$395	\$719	\$695	\$720	\$1,871
Number of employees and contractors	34,000	34,000	33,500	32,600	30,200

(a) Continuing operations excludes the costs and insurance recoveries relating to certain environmental obligations associated with discontinued operations, including those relating to the Fox River and Kalamazoo River matters. Income tax expense in 2018 and 2017 includes amounts related to the impact of U.S. Tax Reform. See Note 7,

(b) "Income Taxes" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for further discussion.

(c) See Note 1, "Basis of Presentation and Significant Accounting Policies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for further discussion of the diluted earnings (loss) per common share attributable to NCR common stockholders from continuing operations, discontinued operations and total.

(d) The following income (expense) amounts, net of tax are included in income from continuing operations attributable to NCR for the years ended December 31:

Table of Contents

In millions	2018	2017	2016	2015	2014
Pension mark-to-market adjustments	\$44	\$(25)	\$(78)	\$(445)	\$(63)
Transformation and restructuring costs	(182)	(20)	(21)	(50)	(116)
Acquisition related amortization of intangibles	(68)	(79)	(83)	(85)	(80)
Acquisition related costs	(5)	(3)	(5)	(8)	(20)
Divestiture and liquidation losses	—	—	(5)	(29)	—
Reserve related to subcontract in MEA	—	—	—	(13)	—
OFAC and FCPA investigations	—	—	—	—	(2)
Goodwill and long-lived asset impairment charges	(174)	—	—	—	—
U.S. Tax reform and other valuation allowances	(45)	(130)	—	—	—
Total	\$(430)	\$(257)	\$(192)	\$(630)	\$(281)

Table of Contents

Index to Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A)

	Page
<u>Business Overview</u>	<u>28</u>
<u>2018 Overview</u>	<u>28</u>
<u>Overview of Strategic Initiatives and Trends</u>	<u>28</u>
<u>Results of Operations</u>	<u>30</u>
<u>Financial Condition, Liquidity and Capital Resources</u>	<u>37</u>
<u>Critical Accounting Policies and Estimates</u>	<u>40</u>
<u>Recently Issued Accounting Pronouncements</u>	<u>46</u>

Table of Contents

Item 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS (MD&A)

BUSINESS OVERVIEW

NCR is a leading software- and services-led enterprise provider in the financial, retail, hospitality and telecommunications and technology industries, with business in 180 countries. NCR offers a range of solutions that help businesses of all sizes compete in an ever-evolving landscape of physical and digital consumers by providing software, advisory and consulting services, hardware, support and managed services that run businesses end to end. Our portfolio includes, but is not limited to, digital first offerings for banking, restaurants and retailers as well as payments, multi-vendor connected device services, automated teller machines (ATMs), point of sale (POS) terminals and self-service technologies. We also resell third-party networking products and provide related service offerings in the telecommunications and technology sectors. Our solutions create value for our customers by increasing productivity and allowing them to address consumer demand for convenience, value and individual service across different commerce channels using a digital first approach.

We have three operating segments: Software, Services and Hardware. Each of our operating segments derives its revenue in each of the sales theaters in which NCR operates. As of January 1, 2019, NCR began management of its business on an industry basis, changing from the previous model of management on a solution basis. This change to our segment reporting for fiscal year 2019 and future periods is further described in Note 1, "Description of Business and Significant Accounting Policies" of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report.

NCR provides specific solutions for customers of varying sizes in the industries we serve. NCR's solutions are built on a foundation of long-established industry knowledge and expertise.

NCR's reputation is founded upon over 134 years of providing quality products, services and solutions to our customers. At the heart of our customer and other business relationships is a commitment to acting responsibly, ethically and with the highest level of integrity. This commitment is reflected in NCR's Code of Conduct, which is available on the Corporate Governance page of our website.

2018 OVERVIEW

As more fully discussed in later sections of this MD&A, the following were significant themes and events for 2018:

- Revenue was \$6.4 billion, which decreased 2% from the prior year, driven by lower Hardware revenue;
- Software revenue increased 1% from the prior year, driven by cloud revenue growth of 7%;
- Services revenue increased 4% and operating margin rate expanded 110 basis points from the prior year;
- Hardware revenue decreased 9% and operating margin rate declined 590 basis points from the prior year;
- Recurring revenue, which includes cloud, software maintenance and hardware maintenance, increased 3% from the prior year and comprised 46% of total revenue;
- Cash flows from operations and free cash flow were \$572 million and \$223 million, respectively, in 2018;
- Completed the acquisition of JetPay Corporation to expand our offerings to include end-to-end payment processing; and
- We repurchased approximately 6.1 million shares of our common stock for \$210 million during the twelve months ended December 31, 2018.

OVERVIEW OF STRATEGIC INITIATIVES AND TRENDS

The rise of digital first commerce, mobile engagement and globalization have dramatically altered the relationship between business and consumer. Increasingly, mega-trends such as big data, the Internet of things and the cloud are driving the next generation of changes in consumer behavior. Consumers now expect businesses to provide a rich, integrated and personalized experience across all commerce channels, including online, mobile and in-store. NCR is at the forefront of this commerce shift, assisting businesses of every size in their digital first channel transformation journeys. Our mission is to be the leading software- and services-led enterprise provider in the financial, retail, hospitality and telecommunications and technology industries, with solutions designed to allow businesses in the industries we serve to deliver a rich, integrated and personalized experience to consumers across digital and physical commerce channels, enabling our customers to move their business forward in a digital first environment. To fulfill this mission, we have developed a long-term growth strategy built on taking better care of our customers, improving execution of new product introductions, accelerating revenue growth and executing spend optimization programs. We believe that our mission and long-term strategy position NCR to continue to drive growth, sustainable revenue, profit and cash flow, and to improve value for all of our stakeholders.

To deliver on our mission and strategy, we are focused on the following main initiatives in 2019:

Table of Contents

Customer Care - Improve the customer experience and execution of new product introductions;
 Stockholder Value - Accelerate profitable top-line revenue growth by investing in and shifting our revenue mix to recurring software and services revenue streams we identify as strategic growth platforms, while improving the Company's cost structure;
 Strategic Growth Platforms and Targeted Acquisitions - Increase capital expenditures in strategic growth platforms and target acquisitions to gain solutions that drive the highest growth and return on investment;
 Talent and Employee Care - Develop, reward and retain talent with competitive recruiting, training and effective incentive-based compensation programs; and
 Sales Enablement - Provide our sales force with top-performing and secure products packaged to target our desired revenue mix and drive customer delight and stockholder value, as well as invest in appropriate training programs to enable success.

Potentially significant risks to the execution of our initiatives and achievement of our strategy include the strength of demand for the products we offer or will offer in the future consistent with our strategy and its effect on our businesses; domestic and global economic and credit conditions including, in particular, those resulting from the imposition or threat of protectionist trade policies or import or export tariffs, global and regional market conditions and spending trends in the financial, retail and hospitality industries, modified or new global or regional trade agreements, the determination by the United Kingdom to exit the European Union and the execution of the same; uncertainty over further potential changes in Eurozone participation and fluctuations in oil and commodity prices; our ability to transform our business model and to sell higher-margin software and services with recurring revenue, including our ability to successfully streamline our hardware operations; the success of our restructuring plans and spend optimization program; our ability to improve execution of new product offering or integration of acquired product offerings; market acceptance of new solutions; competition in the information technology industry; cybersecurity risks and compliance with data privacy and protection requirements; disruptions in or problems with our data center hosting facilities; defects or errors in our products; the historical seasonality of our sales; tax rates and new US tax legislation; and foreign currency fluctuations.

Cybersecurity Risk Management

Similar to most companies, NCR is subject to more frequent and increasingly sophisticated cybersecurity attacks. The Company maintains cybersecurity risk management policies and procedures including disclosure controls, which it regularly evaluates for updates, for handling and responding to cybersecurity events. These policies and procedures include internal notifications and engagements and, as necessary, cooperation with law enforcement. Personnel involved in handling and responding to cybersecurity events periodically undertake tabletop exercises to simulate an event. The internal notification procedures include notifying the applicable Company attorneys, which, depending on the level of severity assigned to the event, may include direct notice to, among others, the Company's General Counsel, Ethics & Compliance Officer, and Chief Privacy Officer. Company attorneys support efforts to evaluate the materiality of any incidents, determine whether notice to third parties such as customers or vendors is required, determine whether any prohibition on insider trading is appropriate, and assess whether disclosure to stockholders or governmental filings, including with the SEC, are required. The internal notification procedures also include notifying various NCR Information Technology Services managers, subject matter experts in the Company's software department and Company leadership, depending on the level of severity assigned to the event.

For further information on potential risks and uncertainties see Item 1A "Risk Factors."

Table of Contents

RESULTS OF OPERATIONS

The following table shows our results for the years ended December 31:

In millions	2018	2017	2016
Revenue	\$6,405	\$6,516	\$6,543
Gross margin	1,675	1,855	1,818
Gross margin as a percentage of revenue	26.2%	28.5%	27.8%
Operating expenses			
Selling, general and administrative expenses	\$1,005	\$923	\$904
Research and development expenses	252	241	225
Restructuring-related charges	—	—	15
Asset impairment charges	227	—	—
Income from operations	\$191	\$691	\$674

The following tables show our revenue by geographic theater for the years ended December 31:

In millions	2018	% of Total	2017	% of Total	% Increase (Decrease)	% Increase (Decrease) Constant Currency ⁽¹⁾
Americas	\$3,707	58%	\$3,809	59%	(3)%	(2)%
Europe, Middle East Africa (EMEA)	1,751	27%	1,786	27%	(2)%	(4)%
Asia Pacific (APJ)	947	15%	921	14%	3%	4%
Consolidated revenue	\$6,405	100%	\$6,516	100%	(2)%	(2)%

In millions	2017	% of Total	2016	% of Total	% Increase (Decrease)	% Increase (Decrease) Adjusted Constant Currency ⁽¹⁾
Americas	\$3,809	59%	\$3,743	57%	2%	4%
Europe, Middle East Africa (EMEA)	1,786	27%	1,896	29%	(6)%	(4)%
Asia Pacific (APJ)	921	14%	904	14%	2%	3%
Consolidated revenue	\$6,516	100%	\$6,543	100%	—%	1%

The following table shows our revenue by segment for the years ended December 31:

In millions	2018	% of Total	2017	% of Total	% Increase (Decrease)	% Increase (Decrease) Constant Currency ⁽¹⁾
Software	\$1,912	30%	\$1,900	29%	1%	1%
Services	2,460	38%	2,373	37%	4%	4%
Hardware	2,033	32%	2,243	34%	(9)%	(9)%
Consolidated revenue	\$6,405	100%	\$6,516	100%	(2)%	(2)%

In millions	2017	% of Total	2016	% of Total	% Increase (Decrease)	% Increase (Decrease) Adjusted Constant Currency ⁽¹⁾
Software	\$1,900	29%	\$1,841	28%	3%	3%
Services	2,373	37%	2,306	35%	3%	3%
Hardware	2,243	34%	2,396	37%	(6)%	(2)%
Consolidated revenue	\$6,516	100%	\$6,543	100%	—%	1%

Table of Contents

(1) The tables above include presentations of period-over-period revenue growth or decline on an adjusted constant currency or constant currency basis. Revenue growth on a constant currency basis is a non-GAAP measure that excludes the effects of foreign currency fluctuations. We calculate this information by translating prior period revenue growth at current period monthly average exchange rates. Revenue growth on an adjusted constant currency basis excludes the effects of foreign currency fluctuations and the impact of the IPS divestiture, and is calculated by translating prior period revenue growth at current period monthly average exchange rates and, for the 2017 comparison, by excluding the prior period results of the divested IPS business for the comparable period after the completion of the sale in May 2016. We believe that examining period-over-period revenue growth or decline excluding foreign currency fluctuations and adjusting for the impact of the IPS divestiture is useful for assessing the underlying performance of our business and provides additional insight into historical and/or future performance, and our management uses revenue growth adjusted for constant currency and the impact of the IPS divestiture to evaluate period-over-period operating performance on a more consistent and comparable basis. These non-GAAP measures should not be considered substitutes for, or superior to, period-over-period revenue growth under GAAP.

The following table provides a reconciliation of region revenue % growth (GAAP) to revenue % growth adjusted constant currency (non-GAAP) for the years ended December 31:

	2018			2017			
	Revenue % Growth (GAAP)	Favorable (unfavorable) FX impact	Revenue % Growth Constant Currency (non-GAAP)	Revenue % Growth (GAAP)	Favorable (unfavorable) FX impact	Divestiture Impact	Revenue % Growth Adjusted Constant Currency (non-GAAP)
Americas	(3)%	(1)%	(2)%	2%	—%	(2)%	4%
EMEA	(2)%	2%	(4)%	(6)%	(1)%	(1)%	(4)%
APJ	3%	(1)%	4%	2%	1%	(2)%	3%
Consolidated revenue	(2)%	—%	(2)%	—%	—%	(1)%	1%

The following table provides a reconciliation of segment revenue % growth (GAAP) to revenue % growth adjusted constant currency (non-GAAP) for the years ended December 31:

	2018			2017			
	Revenue % Growth (GAAP)	Favorable (unfavorable) FX impact	Revenue % Growth Constant Currency (non-GAAP)	Revenue % Growth (GAAP)	Favorable (unfavorable) FX impact	Divestiture Impact	Revenue % Growth Adjusted Constant Currency (non-GAAP)
Software	1%	—%	1%	3%	—%	—%	3%
Services	4%	—%	4%	3%	—%	—%	3%
Hardware	(9)%	—%	(9)%	(6)%	1%	(5)%	(2)%
Consolidated Revenue	(2)%	—%	(2)%	—%	—%	(1)%	1%

2018 compared to 2017 results discussion

Revenue

Revenue decreased 2% in 2018 from 2017 due to lower Hardware revenue. The decline in Hardware revenue was partially offset by growth in Services and Software revenue. Foreign currency fluctuations did not have an impact on the revenue comparison.

Software revenue increased 1% due to growth in cloud revenue of 7% and professional services revenue of 2% which was partially offset by a decrease in software license revenue of 8%. Services revenue increased 4% from 2017 driven by growth in both implementation services and hardware maintenance services. Hardware revenue was down 9% due to declines in Automated Teller Machine (ATM) revenue, self-checkout (SCO) revenue and point-of-sale (POS) revenue.

Table of Contents

Gross Margin

Gross margin as a percentage of revenue was 26.2% in 2018 compared to 28.5% in 2017. Gross margin for the year ended December 31, 2018 included \$102 million related to restructuring and transformation costs and \$23 million related to amortization of acquisition-related intangible assets. Gross margin for the year ended December 31, 2017 included \$11 million related to restructuring and transformation costs and \$50 million related to amortization of acquisition related intangible assets. Excluding these items, gross margin as a percentage of revenue decreased from 29.4% to 28.1%.

For the year ended December 31, 2018, gross margin as a percentage of revenue expanded in our Services segment, which reflects the results of our strategic focus on business process improvement initiatives and a mix shift towards higher value managed services. The Services gross margin rate expansion was offset by a decline in our Software and Hardware segments. The decline in Software gross margin rate was primarily due to lower software license revenue as well as higher mix of third party software content. The decline in Hardware gross margin rate was due to increased costs associated with alleviating supply chain constraints which were largely resolved by the end of 2018 as we executed our manufacturing network redesign strategy.

2017 compared to 2016 results discussion

Revenue

Revenue was flat in 2017 from 2016 due to growth in Software and Services revenue offset by lower Hardware revenue. Foreign currency fluctuations did not have a significant impact on the revenue comparison and the IPS divestiture unfavorably impacted the revenue comparison by 1%.

Software revenue increased 3% driven by growth in cloud, software maintenance and professional services. Services revenue increased 3% from 2016 driven by growth in both implementation services and hardware maintenance services. Hardware revenue was down 6% due to declines in Automated Teller Machine (ATM) revenue and consumables revenue as a result of the IPS divestiture, offset by increases in self-checkout (SCO) revenue and point-of-sale (POS) revenue.

Gross Margin

Gross margin as a percentage of revenue was 28.5% in 2017 compared to 27.8% in 2016. Gross margin for the year ended December 31, 2017 included \$11 million related to restructuring and transformation costs and \$50 million related to amortization of acquisition related intangible assets. Gross margin for the year ended December 31, 2016 included \$4 million related to restructuring and transformation costs and \$58 million related to amortization of acquisition-related intangible assets. Excluding these items, gross margin as a percentage of revenue increased from 28.7% to 29.4% driven by continued focus on productivity improvements in our Services segment.

Effects of Pension, Postemployment, and Postretirement Benefit Plans

NCR's income from continuing operations for the years ended December 31 was impacted by certain employee benefit plans as reflected in the table below:

In millions	2018	2017	2016
Pension (benefit) expense	\$(31)	\$36	\$103
Postemployment expense	40	24	10

Postretirement (benefit)	(4)	(3)	(11)
Total expense	\$5	\$57	\$102

In 2018, pension benefit was \$31 million compared to pension expense of \$36 million in 2017 and pension expense of \$103 million in 2016. In 2018, pension benefit included actuarial gains of \$45 million compared to actuarial losses of \$28 million in 2017 and \$85 million in 2016. Actuarial gains in 2018 were due to an increase in the discount rates as well as a favorable impact from a mortality update in the United Kingdom. Discount rates in 2017 remained consistent with 2016 and actuarial losses in 2017 were primarily due to a mortality update in the United States. Actuarial losses in 2016 were due to a decrease in the discount rates from the prior year, offset by a higher than expected return on global pension assets.

Table of Contents

The components of pension, postemployment and postretirement, other than service cost, are included in other income (expense), net for all periods presented. Service cost is included within the income statement line items within income from operations as other employee compensation costs arising from service rendered during the periods presented.

Selling, General and Administrative Expenses

Selling, general and administrative expenses increased \$82 million to \$1,005 million in 2018 from \$923 million in 2017. As a percentage of revenue, these expenses were 15.7% in 2018 and 14.2% in 2017. In 2018, selling, general and administrative expenses included \$67 million of transformation and restructuring costs, \$62 million of acquisition-related amortization of intangibles and \$6 million of acquisition-related costs. In 2017, selling, general and administrative expenses included \$14 million of transformation and restructuring costs, \$65 million of acquisition-related amortization of intangibles and \$5 million of acquisition-related costs. Excluding these items, selling, general and administrative expenses increased as a percentage of revenue from 12.9% in 2017 to 13.6% in 2018 due to continued investment in the business.

Selling, general, and administrative expenses decreased \$19 million to \$923 million in 2017 from \$904 million in 2016. As a percentage of revenue, these expenses were 14.2% in 2017 and 13.8% in 2016. In 2017, selling, general, and administrative expenses included \$14 million of transformation and restructuring costs, \$65 million of acquisition-related amortization of intangibles and \$5 million of acquisition-related costs. In 2016, selling, general, and administrative expenses included \$7 million of transformation and restructuring costs, \$65 million of amortization of acquisition-related intangible assets and \$7 million of acquisition-related costs. Excluding these items, selling, general and administrative expenses increased as a percentage of revenue from 12.6% in 2016 to 12.9% in 2017 due to increased sales investment as we expanded our strategic offers and go to market strategy.

Research and Development Expenses

Research and development expenses increased \$11 million to \$252 million in 2018 from \$241 million in 2017. As a percentage of revenue, these costs were 3.9% in 2018 and 3.7% in 2017. In 2018, research and development expenses included \$10 million of costs related to our transformation and restructuring costs. In 2017, research and development expenses included \$4 million of transformation costs. After considering this item, research and development expenses increased slightly from 3.6% in 2017 to 3.8% in 2018.

Research and development expenses increased \$16 million to \$241 million in 2017 from \$225 million in 2016. As a percentage of revenue, these costs were 3.7% in 2017 and 3.4% in 2016. In 2017, research and development expenses included \$4 million of transformation costs. After considering this item, research and development expenses increased from 3.4% in 2016 to 3.6% in 2017 driven by planned incremental investments to further advance our software and hardware solutions.

Asset Impairment Charges

In 2018, asset impairment charges were \$227 million which included a \$146 million impairment of goodwill assigned to the Hardware reporting unit and a \$37 million impairment charge related to long-lived assets held and used in our Hardware operations. Refer to Note 4, "Goodwill and Purchased Intangible Assets" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report for additional discussion. Additionally, in 2018, we recorded \$44 million for the write-off of certain internal and external use software capitalization projects that are no longer considered strategic based on review by the new management team and as a result, the projects have been abandoned. In 2017 and 2016, there were no significant asset impairment charges recorded.

Restructuring-Related Charges

In 2016, the Company recorded restructuring-related charges of \$15 million related to the restructuring program announced in July 2014. The charges consist of severance and other employee related costs of \$4 million, other exit costs of \$9 million and asset-related charges of \$2 million. This program was completed during 2016 and therefore, no additional charges are included in 2017 and 2018.

Interest Expense

Interest expense was \$168 million in 2018 compared to \$163 million in 2017 and \$170 million in 2016. Interest expense in all years was primarily related to the Company's senior unsecured notes and borrowings under the Company's senior secured credit facility.

Other Income (Expense), net

Other income (expense), net was income of \$16 million in 2018, expense of \$46 million in 2017 and expense of \$125 million in 2016, with the components reflected in the following table:

Table of Contents

In millions	2018	2017	2016
Interest income	\$5	\$3	\$4
Foreign currency fluctuations and foreign exchange contracts	(26)	(26)	(40)
Bank-related fees	(8)	(8)	(8)
Employee benefit plan	45	(15)	(75)
Divestiture and liquidation losses	—	—	(6)
Other income (expense), net	\$16	\$(46)	\$(125)

Income Taxes

Our effective tax rate was 187% in 2018, 50% in 2017, and 24% in 2016. During 2018, our tax rate was impacted by lower income before tax as well as our final assessment of the impact as a result of U.S. Tax Reform enacted in December 2017. We filed tax method changes that resulted in lower deferred tax assets subject to the downward rate remeasurement, and we recorded a valuation allowance on deferred tax assets related to foreign tax credits not able to be utilized as a result of U.S. Tax Reform. The net impact of these adjustments was an income tax expense of \$37 million. During 2017, our tax rate was impacted by a \$130 million provisional expense primarily related to the application of the newly enacted 21% corporate income tax rate to our net U.S. deferred income tax assets and the repatriation tax. During 2016, our tax rate was impacted by a less favorable mix of earnings, primarily driven by actuarial pension losses in foreign jurisdictions with a valuation allowance against deferred tax assets.

During the year ended December 31, 2018, the Company identified two out of period adjustments that net to \$2 million of income tax benefit. The first adjustment was due to an error in the calculation of deferred tax liabilities associated with software capitalization resulting in \$13 million of income tax benefit which should have been recorded in the fourth quarter of 2017 when deferred taxes were remeasured in connection with U.S. Tax Reform. The second adjustment was to write-off income tax assets related to expired foreign tax credits resulting in \$11 million of income tax expense which should have been recorded between 2010 through 2017. The Company determined the impact of these errors was not material to the annual or interim financial statements of previous periods and the effect of correcting these errors was not material to 2018 annual financial statements.

During 2018, the Internal Revenue Service (IRS) finalized an examination of our 2011, 2012 and 2013 income tax returns. We also concluded audits in Israel and Korea. While we are subject to numerous federal, state and foreign tax audits, we believe that appropriate reserves exist for issues that might arise from these audits. Should these audits be settled, the resulting tax effect could impact the tax provision and cash flows in future periods. During 2019, the Company expects to resolve certain tax matters related to U.S. and foreign jurisdictions. These resolutions could have a material impact on the effective tax rate in 2019.

We regularly review our deferred tax assets for recoverability and establish a valuation allowance if it is more likely than not that some portion or all of a deferred tax asset will not be realized. The determination as to whether a deferred tax asset will be realized is made on a jurisdictional basis and is based on the evaluation of positive and negative evidence. This evidence includes historical taxable income/loss, projected future taxable income, the expected timing of the reversal of existing temporary differences and the implementation of tax planning strategies. Given current earnings and anticipated future earnings at certain subsidiaries, the Company believes that there is a reasonable possibility sufficient positive evidence may become available that would allow the release of a valuation allowance within the next twelve months.

Loss from Discontinued Operations

In 2018, loss from discontinued operations was \$52 million, net of tax, primarily related to updates in estimates and assumptions for the Fox River reserve, a ruling on the Kalamazoo environmental matter as well as audit settlements partially related to Teradata.

In 2017, loss from discontinued operations was \$5 million, net of tax, primarily related to updates in estimates and assumptions for the Fox River reserve partially offset by insurance recoveries received during the year.

In 2016, loss from discontinued operations was \$13 million, net of tax, primarily related to updates in estimates and accruals for litigation expenses related to the Fox River reserve.

Revenue and Operating Income by Segment

34

Table of Contents

As described in Note 13, “Segment Information and Concentrations” of the Notes to Consolidated Financial Statements, the Company managed and reported its businesses through December 31, 2018 in the following segments:

Software - Our software offerings include industry-based software platforms, applications and application suites for the financial services, retail, hospitality and small business industries. We also offer a portfolio of other industry-oriented software applications, including cash management software, video banking software, fraud and loss prevention applications, check and document imaging, remote-deposit capture and customer-facing mobile and digital banking applications for the financial services industry, and secure electronic and mobile payment solutions, sector-specific point of sale software applications, and back-office inventory and store and restaurant management applications for the retail and hospitality industries. Additionally, we provide ongoing software support and maintenance services, as well as consulting and implementation services for our software solutions.

Services - Our global end-to-end services solutions include assessment and preparation, staging, installation, implementation, and maintenance and support for our solutions. We also provide systems management and complete managed services for our product offerings. In addition, we provide installation, maintenance and servicing for third party networking products and computer hardware from select manufacturers.

Hardware - Our hardware solutions include our suite of financial-oriented self-service ATM-related hardware, and our retail- and hospitality-oriented point of sale terminal, self-checkout kiosk and related hardware. We also offer other self-service kiosks, such as self-check in/out kiosks for airlines, and wayfinding solutions for buildings and campuses.

Each of these segments derives its revenue by selling in the sales theaters in which NCR operates. Segments are measured for profitability by the Company’s chief operating decision maker based on revenue and segment operating income. For purposes of discussing our operating results by segment, we exclude the impact of certain non-operational items from segment operating income, consistent with the manner by which management reviews each segment, evaluates performance, and reports our segment results under GAAP. This format is useful to investors because it allows analysis and comparability of operating trends. It also includes the same information that is used by NCR management to make decisions regarding the segments and to assess our financial performance. Our segment results are reconciled to total Company results reported under GAAP in Note 13, “Segment Information and Concentrations” of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report.

In the segment discussions below, we have disclosed the impact of foreign currency fluctuations and the IPS divestiture as it relates to our segment revenue due to their significance.

Software Segment

The following table presents the Software revenue and segment operating income for the years ended December 31:

In millions	2018	2017	2016
Revenue	\$1,912	\$1,900	\$1,841
Operating income	\$492	\$563	\$573
Operating income as a percentage of revenue	25.7%	29.6%	31.1%

Software revenue increased 1% in 2018 compared to 2017 driven by growth in cloud revenue of 7% and professional services revenue of 2%, offset by a decline in software license revenue of 8% as well as software maintenance of 2%. Cloud revenue increased due to additional revenue from existing customers. Professional services revenue grew due to demand for the Company's channel transformation and digital enablement solutions. Software license revenue declined due to lower software license revenue attached to hardware. Software maintenance revenue declined due to lower software license sales from prior periods. Foreign currency fluctuations had no impact on the revenue

comparison.

Software revenue increased 3% in 2017 compared to 2016 driven by growth in cloud revenue of 6%, software maintenance revenue of 1%, professional services revenue of 5%, offset by a decline in software license revenue of 1%. Cloud revenue increased due to prior period bookings. Software maintenance revenue grew due to software license growth in prior periods. Professional services revenue grew due to demand for the Company's channel transformation and digital enablement solutions. Software license revenue declined due to lower software license revenue attached to hardware. Foreign currency fluctuations had no impact on the revenue comparison.

Table of Contents

Operating income decreased in 2018 compared to 2017 primarily driven by lower software license revenue as well as higher third party software content. Operating income decreased in 2017 compared to 2016 driven by decrease in software license revenue but partially offset by improved efficiency in cloud and software maintenance.

Services Segment

The following table presents the Services revenue and segment operating income for the years ended December 31:

In millions	2018	2017	2016
Revenue	\$2,460	\$2,373	\$2,306
Operating income	\$321	\$282	\$198
Operating income as a percentage of revenue	13.0%	11.9%	8.6%

Services revenue increased 4% in 2018 compared to 2017 primarily driven by increased customer demand in managed services offerings and increased satisfaction from existing customers. Foreign currency fluctuations had no impact on the revenue comparison.

Services revenue increased 3% in 2017 compared to 2016 primarily driven by growth in implementation services as well as hardware maintenance as a result of our focus on improving the customer experience. Foreign currency fluctuations had no impact on the revenue comparison.

Operating income increased in 2018 compared to 2017 primarily due to higher revenue and sustainable improvements achieved through our Services transformation initiatives. Operating income increased in 2017 compared to 2016 primarily driven by continued focus on productivity and efficiency improvements.

Hardware Segment

The following table presents the Hardware revenue and segment operating income for the years ended December 31:

In millions	2018	2017	2016
Revenue	\$2,033	\$2,243	\$2,396
Operating (loss) income	\$(125)	\$(5)	\$59
Operating (loss) income as a percentage of revenue	(6.1)%	(0.2)%	2.5%

Hardware revenue decreased 9% in 2018 compared to 2017 driven by declines in ATM revenue of 3%, self-checkout revenue of 15% and point-of-sale revenue of 12%. While there were supply chain constraints throughout the year due to increased demand for our new ATM product family, by the end of the year, we largely resolved supply chain constraints and our overall plan to improve manufacturing operations were progressing with strong production levels exiting the year. Self-checkout revenue decreased due to the timing of customer roll-outs in the current year. Point-of-sale revenue declined due to several large customer roll-outs in the prior year. Foreign currency fluctuations had no impact on the revenue comparison.

Hardware revenue decreased 6% in 2017 compared to 2016 driven by the impact of the IPS divestiture in the prior year and declines in ATM revenue of 17% partially offset by growth in self-checkout revenue of 16% and point-of-sale revenue of 20%. Self-checkout revenue increased due to store transformation. Point-of-sale revenue increased due to growth from a new solution in the petroleum and convenience sector. ATM revenue decreased

mainly due to due to delays in customer spending in North America as well as declines in the Middle East and Africa. Foreign currency fluctuations positively impacted the year-over-year comparison by 1% and the IPS divestiture negatively impacted the year-over-year revenue comparison by 5%.

Operating income decreased in 2018 compared to 2017 driven by lower revenue, an unfavorable product mix, pricing pressure, and higher cost associated with improving the supply chain constraints. Operating income decreased in 2017 compared to 2016 driven by lower volume and the impact on new product introductions.

Table of Contents

FINANCIAL CONDITION, LIQUIDITY AND CAPITAL RESOURCES

In the year ended December 31, 2018, cash provided by operating activities was \$572 million and in the year ended December 31, 2017 cash provided by operating activities was \$752 million. The decrease was due to lower earnings and lower working capital.

NCR's management uses a non-GAAP measure called "free cash flow" to assess the financial performance of the Company. We define free cash flow as net cash provided by (used in) operating activities and cash provided by (used in) discontinued operations, less capital expenditures for property, plant and equipment, less additions to capitalized software plus discretionary pension contributions and settlements. Free cash flow does not have a uniform definition under GAAP, and therefore NCR's definition of this measure may differ from that of other companies. We believe free cash flow information is useful for investors because it relates the operating cash flows from the Company's continuing and discontinued operations to the capital that is spent and to improve business operations. In particular, free cash flow indicates the amount of cash available after capital expenditures for, among other things, investments in the Company's existing businesses, strategic acquisitions and investments, repurchase of NCR stock and repayment of debt obligations. Free cash flow does not represent the residual cash flow available for discretionary expenditures, since there may be other non-discretionary expenditures that are not deducted from the measure. This non-GAAP measure should not be considered a substitute for, or superior to, cash flows from operating activities under GAAP. The table below reconciles net cash provided by (used in) operating activities, the most directly comparable GAAP measure, to NCR's non-GAAP measure of free cash flow for the years ended December 31:

In millions	2018	2017	2016
Net cash provided by operating activities	\$572	\$752	\$896
Capital expenditures for property, plant and equipment	(143)	(128)	(73)
Additions to capitalized software	(170)	(166)	(154)
Net cash used in discontinued operations	(36)	(8)	(39)
Pension discretionary contributions and settlements	—	—	—
Free cash flow (non-GAAP)	\$223	\$450	\$630

In 2018, net cash provided by operating activities decreased \$180 million, and net cash used in discontinued operations increased \$28 million, which contributed to a net decrease in free cash flow of \$227 million in comparison to 2017. Additionally, capital expenditures for property, plant and equipment increased \$15 million primarily due to expenditures related to the new global headquarters in Atlanta Georgia. Additions to capitalized software increased \$4 million due to continued investment in software solution enhancements. The net cash used in discontinued operations in 2018 increased \$28 million in comparison to 2017 primarily due to increased remediation spend associated with the Fox River environmental matters in 2018.

In 2017, net cash provided by operating activities decreased \$144 million, and net cash used in discontinued operations decreased \$31 million, which contributed to a net decrease in free cash flow of \$180 million in comparison to 2016. Additionally, capital expenditures for property, plant and equipment increased \$55 million primarily due to expenditures related to the new global headquarters in Atlanta Georgia. Expenditures related to the new global headquarters were approximately \$60 million offset by approximately \$44 million of reimbursements by the lessor which was included in net cash provided by operating activities. Additions to capitalized software increased \$12 million due to continued investment in software solution enhancements. The net cash used in discontinued operations in 2017 was lower than 2016 primarily due to decreased litigation payments associated with the Fox River and Kalamazoo environmental matters as well as insurance settlements received in 2017.

Financing activities and certain other investing activities are not included in our calculation of free cash flow. Our other investing activities primarily include business acquisitions, divestitures and investments as well as proceeds from the sales of property, plant and equipment.

Our financing activities primarily include proceeds from the issuance of preferred stock, employee stock plans, borrowings on term credit facilities and the issuance of unsecured notes, as well as payments made for share repurchases, repayments of term credit facilities and tax withholding on behalf of employees. During the years ended December 31, 2018, 2017, and 2016, we repurchased a total of \$210 million, \$350 million and \$250 million, respectively, of our common stock. During the years ended December 31, 2018, 2017 and 2016, proceeds from employee stock plans was \$20 million, \$15 million and \$15 million, respectively. During the years ended December 31, 2018, 2017 and 2016, payments made for tax withholding on behalf of employees totaled \$36 million, \$31 million and \$16 million, respectively.

Long Term Borrowings As of December 31, 2018, our senior secured credit facility consisted of a term loan facility with an aggregate principal amount outstanding of \$759 million, and a revolving credit facility in an aggregate principal amount of \$1.10 billion, of which \$120 million was outstanding. Additionally, the revolving credit facility has up to \$400 million available to certain foreign subsidiaries.

Table of Contents

Loans under the revolving credit facility are available in U.S. Dollars, Euros and Pound Sterling. The revolving credit facility also allows a portion of the availability to be used for outstanding letters of credit, and as of December 31, 2018, there were no letters of credit outstanding. As of December 31, 2017, the outstanding principal balance of the term loan facility was \$810 million and no amounts were outstanding under the revolving credit facility.

As of December 31, 2018 and 2017, we had outstanding \$700 million in aggregate principal balance of 6.375% senior unsecured notes due 2023, \$600 million in aggregate principal balance of 5.00% senior unsecured notes due 2022, \$500 million in aggregate principal balance of 4.625% senior unsecured notes due 2021 and \$400 million in aggregate principal balance of 5.875% senior unsecured notes due 2021.

Our revolving trade receivables securitization facility provides the Company with up to \$200 million in funding based on the availability of eligible receivables and other customary factors and conditions. As of December 31, 2018 and December 31, 2017, the Company had \$100 million and zero, respectively, outstanding under the facility.

See Note 6, "Debt Obligations" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report for further information on the senior secured credit facility, the senior unsecured notes and the trade receivables securitization facility.

Employee Benefit Plans We expect to make pension, postemployment and postretirement plan contributions of approximately \$60 million in 2019. See Note 9, "Employee Benefit Plans" of the Notes to the Consolidated Financial Statements included in Item 8 of Part II of this Report for additional discussion on our pension, postemployment and postretirement plans.

Transformation and Restructuring Initiatives Our previously announced transformation and restructuring initiatives continue to progress on track. In Services, our performance and profit improvement program continues to deliver revenue growth and margin expansion. In Hardware, we are continuing the move to a more variable cost structure by reducing the number of manufacturing plants and ramping up production with contract manufacturers. Additionally, we have announced a spend optimization program to drive cost savings through operational efficiencies to generate at least \$100 million of savings in 2019. This initiative will create efficiencies in our corporate functions, reduce spend in the non-strategic areas and limit discretionary spending. In 2019, for all initiatives, we expect to incur a pre-tax charge of \$60 million and a cash impact of \$70 million to \$80 million.

Series A Convertible Preferred Stock On December 4, 2015, NCR issued 820,000 shares of Series A Convertible Preferred Stock to certain entities affiliated with the Blackstone Group L.P. (collectively, Blackstone) for an aggregate purchase price of \$820 million, or \$1,000 per share, pursuant to an Investment Agreement between the Company and Blackstone, dated November 11, 2015. In connection with the issuance of the Series A Convertible Preferred Stock, the Company incurred direct and incremental expenses of \$26 million. These direct and incremental expenses reduced the Series A Convertible Preferred Stock, and will be accreted through retained earnings as a deemed dividend from the date of issuance through the first possible known redemption date, March 16, 2024. Holders of Series A Convertible Preferred Stock are entitled to a cumulative dividend at the rate of 5.5% per annum, payable quarterly in arrears and payable in-kind for the first sixteen dividend payments, after which, beginning in the first quarter of 2020, dividends will be payable in cash or in-kind at the option of the Company. During the year ended December 31, 2018 and 2017, the Company paid dividends-in-kind of \$46 million and \$45 million respectively, associated with the Series A Convertible Preferred Stock. As of December 31, 2018 and 2017, the Company had accrued dividends of \$3 million and \$3 million, respectively. There were no cash dividends declared in the years ended December 31, 2018 and 2017.

The Series A Convertible Preferred Stock is convertible at the option of the holders at any time into shares of common stock at a conversion price of \$30.00 per share and a conversion rate of 33.333 shares of common stock per share of

Series A Convertible Preferred Stock. As of December 31, 2018 and 2017, the maximum number of common shares that could be required to be issued if converted was 29.0 million and 27.5 million shares, respectively, which would represent approximately 20% and 18% of our outstanding common stock as of December 31, 2018 and 2017 including the preferred shares on an as-converted basis.

Under the Investment Agreement, Blackstone agreed not to sell or otherwise transfer its shares of Series A Convertible Preferred Stock (or any shares of common stock issued upon conversion thereof) without the Company's consent until June 4, 2017. In March 2017, we provided Blackstone with an early release from this lock-up, allowing Blackstone to sell approximately 49% of its shares of Series A Convertible Preferred Stock, and in return, Blackstone agreed to amend the Investment Agreement to extend the lock-up on the remaining 51% of its shares of Series A Convertible Preferred Stock for six months until December 1, 2017.

In connection with the early release of the lock-up, Blackstone offered for sale 342,000 shares of Series A Convertible Preferred Stock in an underwritten public offering. In addition, Blackstone converted 90,000 shares of Series A Convertible Preferred Stock into shares of our common stock and we repurchased those shares of common stock for \$48.47 per share. The underwritten offering and the stock repurchase were consummated on March 17, 2017.

Table of Contents

Cash and Cash Equivalents Held by Foreign Subsidiaries Cash and cash equivalents held by the Company's foreign subsidiaries were \$443 million and \$442 million at December 31, 2018 and 2017, respectively. As a result of U.S. Tax Reform, including the repatriation tax, in general we will not be subject to additional U.S. taxes if cash and cash equivalents and short-term investments held outside the U.S. are distributed to the U.S. in the form of dividends or otherwise. However, we may be subject to foreign withholding taxes, which could be significant.

Summary As of December 31, 2018, our cash and cash equivalents totaled \$464 million and our total debt was \$3.18 billion. Our borrowing capacity under our senior secured credit facility was \$980 million and under our trade receivables securitization facility was \$100 million at December 31, 2018. Our ability to generate positive cash flows from operations is dependent on general economic conditions, and the competitive environment in our industry, and is subject to the business and other risk factors described in Item 1A of Part I of this Report. If we are unable to generate sufficient cash flows from operations, or otherwise comply with the terms of our credit facilities, we may be required to seek additional financing alternatives.

We believe that we have sufficient liquidity based on our current cash position, cash flows from operations and existing financing to meet our expected pension, postemployment and postretirement plan contributions, remediation payments related to the Fox River environmental matter, debt servicing obligations, payments related to transformation initiatives, and our operating requirements for the next twelve months.

Contractual Obligations In the normal course of business, we enter into various contractual obligations that impact, or could impact, the liquidity of our operations. The following table and discussion outlines our material obligations as of December 31, 2018 on an undiscounted basis, with projected cash payments in the years shown:

In millions	Total Amounts	2019	2020-2021	2022-2023	2024 & Thereafter	All Other
Debt obligations	\$ 3,183	\$85	\$ 1,795	\$ 1,300	\$ 3	\$ —
Interest on debt obligations	563	163	275	123	2	—
Estimated environmental liability payments	21	20	1	—	—	—
Lease obligations	778	128	176	114	360	—
Purchase obligations	1,042	1,042	—	—	—	—
Uncertain tax positions	91	—	—	—	—	91
Total obligations	\$ 5,678	\$ 1,438	\$ 2,247	\$ 1,537	\$ 365	\$ 91

As of December 31, 2018, we had short and long-term debt totaling \$3.17 billion, which includes debt issuance costs as a direct reduction from the carrying amount of debt.

For purposes of this table, we used interest rates as of December 31, 2018 to estimate the future interest on debt obligations outstanding as of December 31, 2018 and have assumed no voluntary prepayments of existing debt. See Note 6, "Debt Obligations" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report for additional disclosure related to our debt obligations and the related interest rate terms.

The estimated environmental liability payments included in the table of contractual obligations shown above are related to the Fox River environmental matter. The amounts shown are our expected payments, net of the payment obligations of co-obligors; the amounts do not include an estimate for payments to be received from insurers or indemnification parties. Additionally, the amounts above do not include an estimate for payments related to the Kalamazoo environmental matter. For additional information, refer to Note 10, "Commitments and Contingencies" included in Item 8 of Part II of this Report.

Our lease obligations are primarily for future rental amounts for our world headquarters in Atlanta, Georgia as well as for certain sales and manufacturing facilities in various domestic and international locations and leases related to equipment and vehicles.

Purchase obligations represent committed purchase orders and other contractual commitments for goods or services. The purchase obligation amounts were determined through information in our procurement systems and payment schedules for significant contracts. Included in the amounts are committed payments in relation to the long-term service agreement with Accenture under which NCR's transaction processing activities and functions are performed.

We have a \$91 million liability related to our uncertain tax positions. Due to the nature of the underlying liabilities and the extended time often needed to resolve income tax uncertainties, we cannot make reliable estimates of the amount or timing of cash payments

Table of Contents

that may be required to settle these liabilities. For additional information, refer to Note 7, "Income Taxes" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report.

Our U.S. and international employee benefit plans, which are described in Note 9, "Employee Benefit Plans" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report, could require significant future cash payments. We expect mandatory contributions to our U.S. pension plan could be required beginning in 2021 based on current funding requirements and assuming the Company does not complete any actions, including, but not limited to, a pre-fund or de-risking action. The funded status of NCR's U.S. pension plan is an underfunded position of \$494 million as of December 31, 2018 compared to an underfunded position of \$506 million as of December 31, 2017. Our international retirement plans were in an underfunded status of \$139 million as of December 31, 2018, as compared to an underfunded status of \$187 million as of December 31, 2017. The decrease in our underfunded position is primarily attributable to an increase in discount rates as well as a favorable impact from a mortality update in the United Kingdom. Contributions to international pension plans are expected to be approximately \$28 million in 2019.

We also have product warranties that may affect future cash flows. These items are not included in the table of obligations shown above, but are described in detail in Note 10, "Commitments and Contingencies" of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Report.

Our senior secured credit facility and the indentures for our senior unsecured notes include affirmative and negative covenants that restrict or limit our ability to, among other things, incur indebtedness; create liens on assets; engage in certain fundamental corporate changes or changes to our business activities; make investments; sell or otherwise dispose of assets; engage in sale-leaseback or hedging transactions; pay dividends or make similar distributions; repay other indebtedness; engage in certain affiliate transactions; or enter into agreements that restrict our ability to create liens, pay dividends or make loan repayments. Our senior secured credit facility also includes financial covenants that require us to maintain:

a consolidated leverage ratio on the last day of any fiscal quarter, not to exceed (i) in the case of any fiscal quarter ending on or prior to December 31, 2017, (a) the sum of 4.25 and an amount (not to exceed 0.50) to reflect debt used to reduce NCR's unfunded pension liabilities to (b) 1.00, (ii) in the case of any fiscal quarter ending after December 31, 2017 and on or prior to December 31, 2019, (a) the sum of 4.00 and an amount (not to exceed 0.50) to reflect debt used to reduce NCR's unfunded pension liabilities to (b) 1.00, and (iii) in the case of any fiscal quarter ending after December 31, 2019, the sum of (a) 3.75 and an amount (not to exceed 0.50) to reflect debt used to reduce NCR's unfunded pension liabilities to (b) 1.00; and

an interest coverage ratio on the last day of any fiscal quarter greater than or equal to 3.50 to 1.00.

At December 31, 2018, the maximum consolidated leverage ratio under the senior secured credit facility was 4.10 to 1.00.

Off-Balance Sheet Arrangements We have no significant contractual obligations not fully recorded on our Consolidated Balance Sheets or fully disclosed in the notes to our consolidated financial statements. We have no material off-balance sheet arrangements as defined by SEC Regulation S-K Item 303 (a) (4) (ii).

See Note 10, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for additional information on guarantees associated with our business activities.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

Our consolidated financial statements are prepared in accordance with GAAP. In connection with the preparation of these financial statements, we are required to make assumptions, estimates and judgments that affect the reported amounts of assets, liabilities, revenue, expenses and the related disclosure of contingent liabilities. These assumptions, estimates and judgments are based on historical experience and are believed to be reasonable at the time. However, because future events and their effects cannot be determined with certainty, the determination of estimates requires the exercise of judgment. Our critical accounting policies are those that require assumptions to be made about matters that are highly uncertain. Different estimates could have a material impact on our financial results. Judgments and uncertainties affecting the application of these policies and estimates may result in materially different amounts being reported under different conditions or circumstances. Our management continually reviews these assumptions, estimates and judgments to ensure that our financial statements are presented fairly and are materially correct.

In many cases, the accounting treatment of a particular transaction is specifically dictated by GAAP and does not require significant management judgment in its application. There are also areas in which management's judgment in selecting among available alternatives would not produce a materially different result. The significant accounting policies and estimates that we believe are the most critical to aid in fully understanding and evaluating our reported financial results are discussed in the paragraphs below. Our senior management has reviewed these critical accounting policies and related disclosures with our independent registered public accounting firm and the

Table of Contents

Audit Committee of our Board of Directors. See Note 1, “Basis of Presentation and Significant Accounting Policies” of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report, which contains additional information regarding our accounting policies and other disclosures required by GAAP.

Revenue Recognition NCR frequently enters contracts that include multiple performance obligations, including hardware, software, professional consulting services, installation services and maintenance support services. The Company records revenue when, or as, performance obligations are satisfied by transferring control of a promised good or service to the customer. The Company evaluates the transfer of control primarily from the customer’s perspective where the customer has the ability to direct the use of and obtain substantially all of the remaining benefits from that good or service. The Company does not adjust the transaction price for taxes collected from customers, as those amounts are netted against amounts remitted to government authorities.

If a contract has multiple performance obligations, the Company allocates the transaction price, at contract inception, to each performance obligation on a relative standalone selling price basis. The primary method used to estimate standalone selling price is the price that the Company charges for that good or service when the Company sells it separately in similar circumstances to similar customers.

We recognize two different types of revenue - product and service revenue. Our product revenue includes hardware and software which is generally recognized at a point in time, once all conditions for revenue recognition have been met. For hardware products, control is generally transferred when the customer has the ability to direct the use of and obtain substantially all of the remaining benefits of the products, which generally coincides with when the customer has assumed risk of loss of the goods sold. For software products, control is generally transferred when the customer takes possession of, or has complete access to, the software. In certain instances, customer acceptance is required prior to the passage of title and risk of loss of the delivered products. In such cases, revenue is not recognized until the customer acceptance is obtained. Delivery, acceptance, and transfer of title and risk of loss generally occur in the same reporting period. NCR’s customers may request that delivery and passage of title and risk of loss occur on a bill and hold basis.

Our services revenue includes software as a service (SaaS), professional consulting, installation and maintenance support. SaaS primarily consists of fees to provide our customers access to our platform and cloud-based applications. Revenue from SaaS contracts is recognized as variable consideration directly allocated based on customer usage or on a ratable basis over the contract term beginning on the date that our service is made available to the customer. Professional consulting primarily consists of software implementation, integration, customization and optimization services. Revenue from professional consulting contracts that involve significant production, modification or customization of the software is recognized over time as the services are performed. Revenue from professional consulting contracts that does not involve significant production, modification or customization of the software is recognized when the services are completed or customer acceptance of the service is received, if required. For installation and maintenance, control is transferred as the services are provided or ratably over the service period, or, if applicable, after customer acceptance of the service. We apply the ‘as invoiced’ practical expedient, for performance obligations satisfied over time, if the amount we may invoice corresponds directly with the value to the customer of the Company’s performance to date. This expedient permits us to recognize revenue in the amount we invoice the customer.

The nature of our arrangements gives rise to several types of variable consideration including service level agreement credits, stock rotation rights, trade-in credits and volume-based rebates. At contract inception, we include this variable consideration in our transaction price when there is a basis to reasonably estimate the amount of the fee and it is probable there will not be a significant reversal. These estimates are generally made using the expected value method and a portfolio approach, based on historical experience, anticipated performance and our best judgment at the time. These estimates are reassessed at each reporting date. Because of our confidence in estimating these amounts, they are included in the transaction price of our contracts and the associated remaining performance obligations.

If a contract includes software and services that involve significant production, modification or customization of the software, the services are not distinct from the software. For these contracts, both the software and professional services revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying our performance obligations. Incurred cost represents work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Estimated losses, if any, are recognized as soon as such losses become known.

We account for shipping and handling activities related to contracts with customers as costs to fulfill our promise to transfer the associated products, rather than as a separate performance obligation. Accordingly, we record amounts billed for shipping and handling costs as a component of net product sales, and classify such costs as a component of cost of products.

Allowance for Doubtful Accounts We evaluate the collectability of our accounts receivable based on a number of factors. We establish provisions for doubtful accounts using percentages of our accounts receivable balance as an overall proxy to reflect historical average credit losses and also use management judgment that may include elements that are uncertain, including specific provisions for known issues. The percentages are applied to aged accounts receivable balances. Aged accounts are determined based on the number of days

Table of Contents

the receivable is outstanding, measured from the date of the invoice, or from the date of revenue recognition. As the age of the receivable increases, the provision percentage also increases. This policy is applied consistently among all of our operating segments.

Based on the factors below, we periodically review customer account activity in order to assess the adequacy of the allowances provided for potential losses. Factors include economic conditions and judgments regarding collectability of account balances, each customer's payment history and creditworthiness.

The allowance for doubtful accounts was \$31 million as of December 31, 2018, \$37 million as of December 31, 2017, and \$41 million as of December 31, 2016. These allowances represent, as a percentage of gross receivables, 2.2% in 2018, 2.8% in 2017, and 3.1% in 2016.

Given our experience, the reserves for potential losses are considered adequate, but if one or more of our larger customers were to default on its obligations, we could be exposed to potentially significant losses in excess of the provisions established. We continually evaluate our reserves for doubtful accounts and economic deterioration could lead to the need to increase our allowances.

Inventory Valuation Inventories are stated at the lower of cost or net realizable value, using the average cost method. Each quarter, we reassess raw materials, work-in-process, parts and finished equipment inventory costs to identify purchase or usage variances from standards, and valuation adjustments are made. Additionally, to properly provide for potential exposure due to slow-moving, excess, obsolete or unusable inventory, inventory values are reduced based on forecasted usage, orders, technological obsolescence and inventory aging. These factors are impacted by market conditions, technology changes and changes in strategic direction, and require estimates and management judgment that may include elements that are uncertain. On a quarterly basis, we review the current net realizable value of inventory and adjust for any inventory exposure due to age or excess of cost over net realizable value.

We have inventory in more than 40 countries around the world. We purchase inventory from third party suppliers and manufacture inventory at our plants. This inventory is transferred to our distribution and sales organizations at cost plus a mark-up. This mark-up is referred to as inter-company profit. Each quarter, we review our inventory levels and analyze our inter-company profit to determine the correct amount of inter-company profit to eliminate. Key assumptions are made to estimate product gross margins, the product mix of existing inventory balances and current period shipments. Over time, we refine these estimates as facts and circumstances change. If our estimates require refinement, our results could be impacted. The policies described are applied consistently across all of our operating segments.

Warranty Reserves One of our key objectives is to provide superior quality products and services. To that end, we provide a standard manufacturer's warranty typically extending up to 12 months, allowing our customers to seek repair of products under warranty at no additional cost. A corresponding estimated liability for potential warranty costs is recorded at the time of the sale. We sometimes offer extended warranties in the form of product maintenance services to our customers for purchase. We defer the fair value of this revenue and recognize revenue over the life of the extended warranty period. Refer to Note 10, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for further information regarding our accounting for extended warranties.

Future warranty obligation costs are based upon historical factors such as labor rates, average repair time, travel time, number of service calls per machine and cost of replacement parts. When a sale is consummated, the total customer revenue is recognized and the associated warranty liability is recorded based upon the estimated cost to provide the service over the warranty period.

Total warranty costs were \$42 million in 2018, \$43 million in 2017, and \$42 million in 2016. Warranty costs as a percentage of total product revenue was 1.8% in 2018, 1.7% in 2017, and 1.5% in 2016. Historically, the principal factor used to estimate our warranty costs has been service calls per machine. Significant changes in this factor could result in actual warranty costs differing from accrued estimates. Although no near-term changes in our estimated warranty reserves are currently anticipated, in the unlikely event of a significant increase in warranty claims by one or more of our larger customers, costs to fulfill warranty obligations would be higher than provisioned, thereby impacting results.

Goodwill Goodwill is tested at the reporting unit level for impairment on an annual basis during the fourth quarter or more frequently if certain events occur indicating that the carrying value of goodwill may be impaired. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include a decline in expected cash flows, a significant adverse change in legal factors or in the business climate, a decision to sell a business, unanticipated competition, or slower growth rates, among others.

In the evaluation of goodwill for impairment, we have the option to perform a qualitative assessment to determine whether further impairment testing is necessary or to perform a quantitative assessment by comparing the fair value of a reporting unit to its carrying

Table of Contents

amount, including goodwill. Under the qualitative assessment, an entity is not required to calculate the fair value of a reporting unit unless the entity determines that it is more likely than not that its fair value is less than its carrying amount. If under the quantitative assessment the fair value of a reporting unit is less than its carrying amount, then the amount of the impairment loss, if any, is determined based on the amount by which the carrying amount exceeds the fair value up to the total value of goodwill assigned to the reporting unit. Fair values of the reporting units are estimated using a weighted methodology considering the output from both the income and market approaches. The income approach incorporates the use of a discounted cash flow (DCF) analysis. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including revenue growth, operating income margin and discount rate. Several of these assumptions vary among reporting units. The cash flow forecasts are generally based on approved strategic operating plans. The market approach is performed using the Guideline Public Companies (GPC) method which is based on earnings multiple data. We perform a reconciliation between our market capitalization and our estimate of the aggregate fair value of the reporting units, including consideration of a control premium.

Late in the quarter ended June 30, 2018, we determined there was an indication that the carrying value of the net assets assigned to the Hardware reporting unit may not be recoverable. This determination was based on the lowering of our full year forecast for 2018, driven by reduced revenue and gross margin rates expected for the third and fourth quarters of 2018, and the resulting impact on the current year and future cash flow projections of the Hardware reporting unit. Given the undiscounted cash flows of the asset group, which we determined to be at the reporting unit level, were below the carrying value of the net assets, we recorded an impairment charge for the difference between the fair value and the carrying value of the long-lived assets. The fair value of the long-lived assets was determined based on the nature of the asset through either third party appraisals, replacement cost or discounted cash flow analysis.

As a result, in the three months ended June 30, 2018 the Company recorded impairment charges of \$21 million related to property, plant and equipment held and used in NCR's hardware reporting unit, \$16 million related to purchased intangibles and \$146 million for goodwill assigned to the Hardware reporting unit. These charges were recorded in the line item asset impairment charges in our Consolidated Statement of Operations for the twelve months ended December 31, 2018.

We performed our annual impairment assessment of goodwill during the fourth quarter of 2018, which did not indicate an impairment existed for the Software or Services segments.

Valuation of Long-lived Assets and Amortizable Other Intangible Assets We perform impairment tests for our long-lived assets if an event or circumstance indicates that the carrying amount of our long-lived assets may not be recoverable. In response to changes in industry and market conditions, we may also strategically realign our resources and consider restructuring, disposing of, or otherwise exiting businesses. Such activities could result in impairment of our long-lived assets or other intangible assets. We also are subject to the possibility of impairment of long-lived assets arising in the ordinary course of business. We consider the likelihood of impairment if certain events occur indicating that the carrying value of the long-lived assets may be impaired and we may recognize impairment if the carrying amount of a long-lived asset or intangible asset is not recoverable from its undiscounted cash flows. Impairment is measured as the difference between the carrying amount and the fair value of the asset. We use both the income approach and market approach to estimate fair value. Our estimates of fair value are subject to a high degree of judgment since they include a long-term forecast of future operations. Accordingly, any value ultimately derived from our long-lived assets may differ from our estimate of fair value.

Pension, Postretirement and Postemployment Benefits We sponsor domestic and foreign defined benefit pension and postemployment plans as well as domestic postretirement plans. As a result, we have significant pension,

postretirement and postemployment benefit costs, which are developed from actuarial valuations. Actuarial assumptions attempt to anticipate future events and are used in calculating the expense and liability relating to these plans. These factors include assumptions we make about interest rates, expected investment return on plan assets, rate of increase in healthcare costs, total and involuntary turnover rates, and rates of future compensation increases. In addition, our actuarial consultants advise us about subjective factors such as withdrawal rates and mortality rates to use in our valuations. We generally review and update these assumptions on an annual basis at the beginning of each fiscal year. We are required to consider current market conditions, including changes in interest rates, in making these assumptions. The actuarial assumptions that we use may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates, or longer or shorter life spans of participants. These differences may result in a significant impact to the amount of pension, postretirement or postemployment benefits expense we have recorded or may record. Ongoing pension, postemployment and postretirement expense impacts all of our segments. Pension mark-to-market adjustments, settlements, curtailments and special termination benefits are excluded from our segment results as those items are not included in the evaluation of segment performance. See Note 13, "Segment Information and Concentrations," in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for a reconciliation of our segment results to income from operations.

The key assumptions used in developing our 2018 expense were discount rates of 3.2% for our U.S. pension plan and 3.1% for our postretirement plan, and an expected return on assets assumption of 3.1% for our U.S. pension plan in 2018. The U.S. plan represented

Table of Contents

62% of the pension obligation and 100% of the postretirement medical plan obligation as of December 31, 2018.

Holding all other assumptions constant, a 0.25% change in the discount rate used for the U.S. plan would have increased or decreased 2018 ongoing pension expense by approximately \$3 million and would have had an immaterial impact on 2018 postretirement income. A 0.25% change in the expected rate of return on plan assets assumption for the U.S. pension plan would have increased or decreased 2018 ongoing pension expense by approximately \$3 million. Our expected return on plan assets has historically been and will likely continue to be material to net income. For 2019, we intend to use discount rates of 3.8% and 3.7% in determining the 2019 U.S. pension and postretirement expense, respectively. We intend to use an expected rate of return on assets assumption of 3.6% for the U.S. pension plan.

Effective January 1, 2017, we changed the method used to estimate the service and interest components of net periodic benefit cost for our significant pension plans where yield curves are available. Previously, we estimated such cost components utilizing a single weighted-average discount rate derived from the yield curve used to measure the pension benefit obligation. The new methodology utilizes a full yield curve approach by applying the specific spot rates along the yield curve used in the determination of the pension benefit obligation to their underlying projected cash flows and provides a more precise measurement of service and interest costs by improving the correlation between projected cash flows and their corresponding spot rates. This change does not affect the measurement of our total benefit obligation and is applied prospectively as a change in estimate.

We recognize additional changes in the fair value of plan assets and net actuarial gains or losses of our pension plans upon remeasurement, which occurs at least annually in the fourth quarter of each year. The remaining components of pension expense, primarily net service cost, interest cost, and the expected return on plan assets, are recorded on a quarterly basis as ongoing pension expense. While it is required that we review our actuarial assumptions each year at the measurement date, we generally do not change them between measurement dates. We use a measurement date of December 31 for all of our plans. Changes in assumptions or asset values may have a significant effect on the annual measurement of expense or income in the fourth quarter.

The most significant assumption used in developing our 2019 postemployment plan expense is the assumed rate of involuntary turnover of 4.3%. The involuntary turnover rate is based on historical trends and projections of involuntary turnover in the future. A 0.25% change in the rate of involuntary turnover would have increased or decreased 2018 expense by approximately \$2 million. The sensitivity of the assumptions described above is specific to each individual plan and not to our pension, postretirement and postemployment plans in the aggregate.

Environmental and Legal Contingencies Each quarter, we review the status of each claim and legal proceeding and assess our potential financial exposure. If the potential loss from any claim or legal proceeding would be material and is considered probable and the amount can be reasonably estimated, we accrue a liability for the estimated loss. To the extent that the amount of such a probable loss is estimable only by reference to a range of equally likely outcomes, and no amount within the range appears to be a better estimate than any other amount, we accrue the amount at the low end of the range. Because of uncertainties related to these matters, the use of estimates, assumptions and judgments, and external factors beyond our control, accruals are based on the best information available at the time. At environmental sites, or portions of environmental sites, where liability is determined to be probable but a remedy has not yet been determined, we accrue for the costs of investigations and studies for the affected areas but not for the costs of remediation. As additional information becomes available, we reassess the potential liability related to our pending claims and litigation and may revise our estimates. Such revisions in the estimates of the potential liabilities could have a material impact on our results of operations and financial position. When insurance carriers or third parties have agreed to pay any amounts related to costs, and we believe that it is probable that we can collect such amounts, those amounts are reflected as receivables in our Consolidated Balance Sheet.

The most significant legal contingencies impacting our Company are the Fox River and Kalamazoo River matters, which are further described in detail in Note 10, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report. NCR has been identified as a potentially responsible party (PRP) at both sites.

As described below and in Note 10, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report, while substantial progress has been made in the Fox River clean-up including a consent decree that establishes the general parameters of NCR's liability therefor (the consent decree remained subject to appeal as of December 31, 2018), and while significant litigation activities have taken place with respect to the Kalamazoo River, the extent of our potential liabilities continues to be subject to significant uncertainties described below.

Our net reserves for, respectively, the Fox River matter and the Kalamazoo matter, as of December 31, 2018 were approximately \$17 million and \$47 million, as further discussed in Note 10, "Commitments and Contingencies" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report. The Company regularly re-evaluates the assumptions used in determining the appropriate reserve for the Fox River and Kalamazoo matters as additional information becomes available and, when warranted, makes appropriate adjustments.

Table of Contents

Income Taxes We recognize deferred tax assets and liabilities based on the differences between the financial statement carrying amounts and the tax basis of assets and liabilities. The deferred tax assets and liabilities are determined based on the enacted tax rates expected to apply in the periods in which the deferred tax assets or liabilities are anticipated to be settled or realized.

We regularly review our deferred tax assets for recoverability and establish a valuation allowance if it is more likely than not that some portion or all of a deferred tax asset will not be realized. The determination as to whether a deferred tax asset will be realized is made on a jurisdictional basis and is based on the evaluation of positive and negative evidence. This evidence includes historical taxable income, projected future taxable income, the expected timing of the reversal of existing temporary differences and the implementation of tax planning strategies. Projected future taxable income is based on our expected results and assumptions as to the jurisdiction in which the income will be earned. The expected timing of the reversals of existing temporary differences is based on current tax law and our tax methods of accounting. As a result of this determination, we had valuation allowances of \$485 million as of December 31, 2018 and \$415 million as of December 31, 2017, related to certain deferred income tax assets, primarily tax loss carryforwards, in jurisdictions where there is uncertainty as to the ultimate realization of a benefit from those tax assets.

If we are unable to generate sufficient future taxable income, or if there is a material change in the actual effective tax rates or the time period within which the underlying temporary differences become taxable or deductible, or if the tax laws change unfavorably, then we could be required to increase our valuation allowance against our deferred tax assets, resulting in an increase in our effective tax rate.

The Tax Cuts and Jobs Act of 2017 ("U.S. Tax Reform") was enacted in December 2017. The legislation significantly changed the U.S. tax law by, among other things, lowering U.S. corporate income tax rates, implementing a territorial tax system and imposing a one-time tax on deemed repatriated earnings of foreign subsidiaries. The legislation reduced the U.S. corporate income tax rate from 35% to 21%, effective January 1, 2018. The SEC staff issued guidance to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of U.S. Tax Reform and allows the registrant to record provisional amounts during a measurement period not to extend beyond one year of the enactment date. The provisional impacts related to the one-time repatriation tax and remeasurement of deferred tax balances were recorded in our consolidated financial statements for the year ended December 31, 2017. We recorded additional impacts related to the remeasurement of deferred tax balances and the establishment of valuation allowances on foreign tax credits during the year ended December 31, 2018. As of December 31, 2018, we have completed our assessment of the impact of U.S. Tax Reform.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon settlement. Interest and penalties related to uncertain tax positions are recognized as part of the provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law until such time that the related tax benefits are recognized.

The provision for income taxes may change period-to-period based on non-recurring events, such as the settlement of income tax audits and changes in tax laws, as well as recurring factors including the geographic mix of income before taxes, state and local taxes and the effects of various global income tax strategies. We maintain certain strategic management and operational activities in overseas subsidiaries and our foreign earnings are taxed at rates that are generally lower than in the United States. As of December 31, 2018, we did not provide for U.S. federal income taxes or foreign withholding taxes on approximately \$2.7 billion of undistributed earnings of our foreign subsidiaries as such earnings are expected to be reinvested indefinitely.

Refer to Note 7, "Income Taxes" in the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report for disclosures related to foreign and domestic pretax income, foreign and domestic income tax (benefit) expense and the effect foreign taxes have on our overall effective tax rate.

Stock-based Compensation We measure compensation cost for stock awards at fair value and recognize compensation expense over the service period for which awards are expected to vest. We utilize the Black-Scholes option pricing model to estimate the fair value of options at the date of grant, which requires the input of highly subjective assumptions, including expected volatility and expected holding period. We estimate forfeitures for awards granted which are not expected to vest. The estimation of stock awards that will ultimately vest requires judgment, and to the extent that actual results or updated estimates differ from our current estimates, such amounts will be recorded as a cumulative adjustment in the period in which estimates are revised. We consider many factors when estimating expected forfeitures, including types of awards and historical experience. Actual results and future changes in estimates may differ from our current estimates.

Table of Contents

We have performance-based awards that vest only if specific performance conditions are satisfied, typically at the end of a multi-year performance period, and the service requirement is fulfilled. The number of shares that will be earned can vary based on actual performance. No shares will vest if the objectives are not met, and in the event the objectives are exceeded, additional shares will vest up to a maximum amount. The cost of these awards is expensed over the service period based upon management's estimates of achievement against the performance criteria. Because the actual number of shares to be awarded is not known until the end of the performance period, the actual compensation expense related to these awards could differ from our current expectations.

RECENTLY ISSUED ACCOUNTING PRONOUNCEMENTS

A discussion of recently issued accounting pronouncements is described in Note 1, "Basis of Presentation and Significant Accounting Policies" of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Report, and we incorporate by reference such discussion in this MD&A.

Item 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market Risk

We are exposed to market risks primarily from changes in foreign currency exchange rates and interest rates. It is our policy to manage our foreign exchange exposure and debt structure in order to manage capital costs, control financial risks and maintain financial flexibility over the long term. In managing market risks, we employ derivatives according to documented policies and procedures, including foreign currency contracts and interest rate swaps. We do not use derivatives for trading or speculative purposes.

Foreign Exchange Risk

Since a substantial portion of our operations and revenue occur outside the U.S., and in currencies other than the U.S. Dollar, our results can be significantly impacted by changes in foreign currency exchange rates. We have exposure to approximately 50 functional currencies and are exposed to foreign currency exchange risk with respect to our sales, profits and assets and liabilities denominated in currencies other than the U.S. Dollar. Although we use financial instruments to hedge certain foreign currency risks, we are not fully protected against foreign currency fluctuations and our reported results of operations could be affected by changes in foreign currency exchange rates. To manage our exposures and mitigate the impact of currency fluctuations on the operations of our foreign subsidiaries, we hedge our main transactional exposures through the use of foreign exchange forward and option contracts. These foreign exchange contracts are designated as highly effective cash flow hedges. This is primarily done through the hedging of foreign currency denominated inter-company inventory purchases by the marketing units. All of these transactions are forecasted. We also use derivatives not designated as hedging instruments consisting primarily of forward contracts to hedge foreign currency denominated balance sheet exposures. For these derivatives we recognize gains and losses in the same period as the remeasurement losses and gains of the related foreign currency-denominated exposures.

We utilize non-exchange traded financial instruments, such as foreign exchange forward and option contracts, that we purchase exclusively from highly rated financial institutions. We record these contracts on our balance sheet at fair market value based upon market price quotations from the financial institutions. We do not enter into non-exchange traded contracts that require the use of fair value estimation techniques, but if we did, they could have a material impact on our financial results.

For purposes of analyzing potential risk, we use sensitivity analysis to quantify potential impacts that market rate changes may have on the fair values of our hedge portfolio related to firmly committed or forecasted transactions. The sensitivity analysis represents the hypothetical changes in value of the hedge position and does not reflect the related gain or loss on the forecasted underlying transaction. A 10% appreciation or depreciation in the value of the U.S. Dollar against foreign currencies from the prevailing market rates would have resulted in a corresponding increase or decrease of \$18 million as of December 31, 2018 in the fair value of the hedge portfolio. The Company expects that any increase or decrease in the fair value of the portfolio would be substantially offset by increases or decreases in the underlying exposures being hedged.

The U.S. Dollar was slightly weaker in 2018 compared to 2017 based on comparable weighted averages for our functional currencies. This had no impact on 2018 revenue versus 2017 revenue. This excludes the effects of our hedging activities and, therefore, does not reflect the actual impact of fluctuations in exchange rates on our operating income.

Interest Rate Risk

Table of Contents

We are subject to interest rate risk principally in relation to variable-rate debt. Approximately 69% of our borrowings were on a fixed rate basis as of December 31, 2018. The increase in pre-tax interest expense for the year ended December 31, 2018 from a hypothetical 100 basis point increase in variable interest rates would be approximately \$10 million.

Concentrations of Credit Risk

We are potentially subject to concentrations of credit risk on accounts receivable and financial instruments, such as hedging instruments and cash and cash equivalents. Credit risk includes the risk of nonperformance by counterparties. The maximum potential loss may exceed the amount recognized on the balance sheet. Exposure to credit risk is managed through credit approvals, credit limits, selecting major international financial institutions as counterparties to hedging transactions and monitoring procedures. Our business often involves large transactions with customers for which we do not require collateral. If one or more of those customers were to default in its obligations under applicable contractual arrangements, we could be exposed to potentially significant losses. Moreover, a prolonged downturn in the global economy could have an adverse impact on the ability of our customers to pay their obligations on a timely basis. We believe that the reserves for potential losses are adequate. As of December 31, 2018, we did not have any significant concentration of credit risk related to financial instruments.

Table of Contents

Index to Financial Statements and Supplemental Data

	Page
<u>Report of Independent Registered Public Accounting Firm</u>	<u>49</u>
<u>Consolidated Statements of Operations</u>	<u>51</u>
<u>Consolidated Statements of Comprehensive Income</u>	<u>52</u>
<u>Consolidated Balance Sheets</u>	<u>53</u>
<u>Consolidated Statements of Cash Flows</u>	<u>54</u>
<u>Consolidated Statements of Changes in Stockholders' Equity</u>	<u>55</u>
<u>Notes to Consolidated Financial Statements</u>	<u>56</u>
<u>Note 1. Basis of Presentation and Significant Accounting Policies</u>	<u>56</u>
<u>Note 2. Revenue Recognized Under Previous Guidance</u>	<u>68</u>
<u>Note 3. Business Combinations and Divestitures</u>	<u>69</u>
<u>Note 4. Goodwill and Purchased Intangible Assets</u>	<u>71</u>
<u>Note 5. Series A Preferred Stock</u>	<u>72</u>
<u>Note 6. Debt Obligations</u>	<u>74</u>
<u>Note 7. Income Taxes</u>	<u>77</u>
<u>Note 8. Stock Compensation Plans</u>	<u>81</u>
<u>Note 9. Employee Benefit Plans</u>	<u>83</u>
<u>Note 10. Commitments and Contingencies</u>	<u>93</u>
<u>Note 11. Derivatives and Hedging Instruments</u>	<u>98</u>
<u>Note 12. Fair Value of Assets and Liabilities</u>	<u>101</u>
<u>Note 13. Segment Information</u>	<u>102</u>
<u>Note 14. Accumulated Other Comprehensive Income</u>	<u>105</u>
<u>Note 15. Restructuring Plan</u>	<u>106</u>
<u>Note 16. Supplemental Financial Information</u>	<u>107</u>
<u>Note 17. Guarantor Financial Statements</u>	<u>108</u>
<u>Note 18. Quarterly Information (Unaudited)</u>	<u>120</u>

Table of Contents

Item 8. FINANCIAL STATEMENTS AND SUPPLEMENTAL DATA

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of NCR Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of NCR Corporation and its subsidiaries (the “Company”) as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive income, changes in shareholders’ equity, and cash flows for each of the three years in the period ended December 31, 2018, including the related notes, and financial statement schedule listed in the index appearing under Item 15(a)(2) (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

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

Change in Accounting Principle

As discussed in Notes 1 and 2 to the consolidated financial statements, the Company changed the manner in which it accounts for revenues from contracts with customers in 2018.

Basis for Opinions

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

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

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used

and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

As described in Management's Report on Internal Control over Financial Reporting appearing under Item 9A, management has excluded JetPay Corporation from its assessment of internal control over financial reporting as of December 31, 2018 because it was acquired by the Company in a purchase business combination during 2018. We have also excluded JetPay Corporation from our audit of internal control over financial reporting. JetPay Corporation is a wholly-owned subsidiary whose total assets and total revenues excluded from management's assessment and our audit of internal control over financial reporting represent 1% and 0.1%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

Table of Contents

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ PricewaterhouseCoopers LLP

Atlanta, Georgia

February 28, 2019

We have served as the Company's auditor since 1993.

Table of ContentsNCR Corporation
Consolidated Statements of Operations

For the years ended December 31, (in millions, except per share amounts)	2018	2017	2016
Product revenue	\$2,341	\$2,579	\$2,737
Service revenue	4,064	3,937	3,806
Total revenue	6,405	6,516	6,543
Cost of products	1,988	2,021	2,099
Cost of services	2,742	2,640	2,626
Selling, general and administrative expenses	1,005	923	904
Research and development expenses	252	241	225
Asset impairment charges	227	—	—
Restructuring-related charges	—	—	15
Total operating expenses	6,214	5,825	5,869
Income from operations	191	691	674
Interest expense	(168)	(163)	(170)
Other income (expense), net	16	(46)	(125)
Income (loss) from continuing operations before income taxes	39	482	379
Income tax expense	73	242	92
Income (loss) from continuing operations	(34)	240	287
Loss from discontinued operations, net of tax	(52)	(5)	(13)
Net income (loss)	(86)	235	274
Net income attributable to noncontrolling interests	2	3	4
Net income (loss) attributable to NCR	\$(88)	\$232	\$270
Amounts attributable to NCR common stockholders:			
Income (loss) from continuing operations	\$(36)	\$237	\$283
Series A convertible preferred stock dividends	(49)	(47)	(49)
Deemed dividend on modification of Series A convertible preferred stock	—	(4)	—
Deemed dividend on Series A convertible preferred stock related to redemption	—	(58)	—
Income (loss) from continuing operations attributable to NCR	(85)	128	234
Loss from discontinued operations, net of tax	(52)	(5)	(13)
Net income (loss) attributable to NCR common stockholders	\$(137)	\$123	\$221
Income (loss) per share attributable to NCR common stockholders:			
Income (loss) per common share from continuing operations			
Basic	\$(0.72)	\$1.05	\$1.86
Diluted	\$(0.72)	\$1.01	\$1.80
Net income (loss) per common share			
Basic	\$(1.16)	\$1.01	\$1.76
Diluted	\$(1.16)	\$0.97	\$1.71
Weighted average common shares outstanding			
Basic	118.4	121.9	125.6
Diluted (continuing operations)	118.4	127.0	157.4
Diluted (net income)	118.4	127.0	129.2

The accompanying notes are an integral part of the Consolidated Financial Statements.

Table of ContentsNCR Corporation
Consolidated Statements of Comprehensive Income

For the years ended December 31 (in millions)	2018	2017	2016
Net income (loss)	\$(86)	\$235	\$274
Other comprehensive income (loss):			
Currency translation adjustments			
Currency translation adjustments	(53)	39	(57)
Derivatives			
Unrealized gain (loss) on derivatives	11	(16)	19
Gains on derivatives arising during the period	(7)	(1)	(1)
Less income tax benefit (expense)	(1)	3	(4)
Employee benefit plans			
Prior service benefit	(4)	—	—
Amortization of prior service cost	(9)	(11)	(19)
Net (loss) gain arising during the period	12	(13)	(1)
Amortization of actuarial (loss) gain	—	(2)	(2)
Less income tax benefit (expense)	1	5	5
Other comprehensive income (loss)	(50)	4	(60)
Total comprehensive income (loss)	(136)	239	214
Less comprehensive income attributable to noncontrolling interests:			
Net income	2	3	4
Currency translation adjustments	(2)	(2)	(5)
Amounts attributable to noncontrolling interests	—	1	(1)
Comprehensive income (loss) attributable to NCR common stockholders	\$(136)	\$238	\$215
The accompanying notes are an integral part of the Consolidated Financial Statements.			

Table of Contents

NCR Corporation

Consolidated Balance Sheets

As of December 31 (in millions except per share amounts)	2018	2017
Assets		
Current assets		
Cash and cash equivalents	\$464	\$537
Accounts receivable, net	1,356	1,270
Inventories	806	780
Other current assets	397	243
Total current assets	3,023	2,830
Property, plant and equipment, net	359	341
Goodwill	2,692	2,741
Intangibles, net	595	578
Prepaid pension cost	140	118
Deferred income taxes	448	460
Other assets	504	586
Total assets	\$7,761	\$7,654
Liabilities and stockholders' equity		
Current liabilities		
Short-term borrowings	\$185	\$52
Accounts payable	897	762
Payroll and benefits liabilities	238	219
Deferred service revenue and customer deposits	461	458
Other current liabilities	501	398
Total current liabilities	2,282	1,889
Long-term debt	2,980	2,939
Pension and indemnity plan liabilities	759	798
Postretirement and postemployment benefits liabilities	118	133
Income tax accruals	91	148
Other liabilities	259	200
Total liabilities	6,489	6,107
Commitments and Contingencies (Note 10)		
Redeemable noncontrolling interest	14	15
Series A convertible preferred stock: par value \$0.01 per share, 3.0 shares authorized, 0.9 and 0.8 shares issued and outstanding as of December 31, 2018 and 2017, respectively; redemption amount and liquidation preference of \$871 and \$825 as of December 31, 2018 and 2017, respectively	859	810
Stockholders' equity		
NCR stockholders' equity		
Preferred stock: par value \$0.01 per share, 100.0 shares authorized, no shares issued and outstanding as of December 31, 2018 and 2017, respectively	—	—
Common stock: par value \$0.01 per share, 500.0 shares authorized, 118.7 and 122.0 shares issued and outstanding as of December 31, 2018 and 2017, respectively	1	1
Paid-in capital	34	60
Retained earnings	606	857
Accumulated other comprehensive loss	(246)	(199)
Total NCR stockholders' equity	395	719
Noncontrolling interests in subsidiaries	4	3
Total stockholders' equity	399	722

Total liabilities and stockholders' equity

\$7,761 \$7,654

The accompanying notes are an integral part of the Consolidated Financial Statements.

Table of Contents

NCR Corporation

Consolidated Statements of Cash Flows

For the years ended December 31 (in millions)

Operating activities

	2018	2017	2016
Net income (loss)	\$(86)	\$235	\$274

Adjustments to reconcile net income (loss) to net cash provided by operating activities:

Loss from discontinued operations	52	5	13
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Depreciation and amortization	330	354	344
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Stock-based compensation expense	72	77	61
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Deferred income taxes	14	173	10
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Gain on sale of property, plant and equipment and other assets	(2)	(3)	—
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Loss on divestiture	—	—	2
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Impairment of long-lived and other assets	239	1	2
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Changes in assets and liabilities:

Receivables	(155)	29	(89)
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Inventories	(70)	(68)	(86)
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Current payables and accrued expenses	198	(78)	216
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Deferred service revenue and customer deposits	(13)	10	88
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Employee benefit plans	(60)	(4)	33
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Other assets and liabilities	53	21	28
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Net cash provided by operating activities	572	752	896
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Investing activities

Expenditures for property, plant and equipment	(143)	(128)	(73)
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Proceeds from sales of property, plant and equipment	3	6	—
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Additions to capitalized software	(170)	(166)	(154)
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Business acquisitions, net	(206)	(8)	—
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Proceeds from divestiture	—	3	47
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Other investing activities, net	(4)	3	(9)
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Net cash used in investing activities	(520)	(290)	(189)
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Financing activities

Short term borrowings, net	(1)	(4)	(8)
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Payments on term credit facilities	(51)	(61)	(97)
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Payments on revolving credit facilities	(2,233)	(1,940)	(1,431)
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Borrowings on revolving credit facilities	2,453	1,940	1,331
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Debt issuance costs	—	—	(9)
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Repurchases of Company common stock	(210)	(350)	(250)
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Tax withholding payments on behalf of employees	(36)	(31)	(16)
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Proceeds from employee stock plans	20	15	15
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Other financing activities	—	(3)	(2)
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Net cash used in financing activities	(58)	(434)	(467)
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Cash flows from discontinued operations

Net cash used in discontinued operations operating activities	(36)	(8)	(39)
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Effect of exchange rate changes on cash, cash equivalents and restricted cash	(25)	16	(29)
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Increase (decrease) in cash, cash equivalents and restricted cash	(67)	36	172
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Cash, cash equivalents and restricted cash at beginning of period	543	507	335
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Cash, cash equivalents and restricted cash at end of period	\$476	\$543	\$507
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in millions

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Reconciliation of cash, cash equivalents and restricted cash as shown in the Consolidated Statement of Cash Flows	2018	2017	2016
Cash and cash equivalents	\$464	\$537	\$498
Restricted cash included in Other assets	12	6	9
Total cash, cash equivalents and restricted cash	\$476	\$543	\$507
Supplemental data			
Cash paid during the year for:			
Income taxes	\$106	\$98	\$66
Interest	\$160	\$159	\$155
The accompanying notes are an integral part of the Consolidated Financial Statements.			

Table of Contents

NCR Corporation

Consolidated Statements of Changes in Stockholders' Equity

in millions	NCR Stockholders				Accumulated Other Comprehensive (Loss) Income	Non-Redeemable Noncontrolling Interests in Subsidiaries	Total
	Common Stock Shares	Amount	Paid-in Capital	Retained Earnings			
December 31, 2015	133	\$ 1	\$ —	\$ 869	\$ (150)	\$ 6	\$ 726
Comprehensive income (loss):							
Net income (loss)	—	—	—	270	—	2	272
Other comprehensive income (loss)	—	—	—	—	(55)	(2)	(57)
Total comprehensive income (loss)	—	—	—	270	(55)	—	215
Employee stock purchase and stock compensation plans	2	—	59	—	—	—	59
Dividend distribution to minority shareholder	—	—	—	—	—	(2)	(2)
Repurchase of Company common stock	(10)	—	(27)	(223)	—	—	(250)
Series A convertible preferred stock dividends	—	—	—	(49)	—	—	(49)
December 31, 2016	125	1	32	867	(205)	4	699
Comprehensive income (loss):							
Net income (loss)	—	—	—	232	—	3	235
Other comprehensive income (loss)	—	—	—	—	6	(2)	4
Total comprehensive income (loss)	—	—	—	232	6	1	239
Cumulative effect of a change in accounting principle related to employee share-based payments	—	—	—	39	—	—	39
Employee stock purchase and stock compensation plans	1	—	61	—	—	—	61
Dividend distribution to minority shareholder	—	—	—	—	—	(2)	(2)
Repurchase of Company common stock	(7)	—	(178)	(172)	—	—	(350)
Series A convertible preferred stock dividends	—	—	—	(47)	—	—	(47)
Deemed dividend on modification of Series A Convertible Preferred Stock	—	—	—	(4)	—	—	(4)
Deemed dividend on redemption of Series A Convertible Preferred Stock	—	—	58	(58)	—	—	—
Redemption of Series A Convertible Preferred Stock	3	—	87	—	—	—	87
December 31, 2017	122	1	60	857	(199)	3	722
Comprehensive income (loss):							
Net income (loss)	—	—	—	(88)	—	1	(87)
Other comprehensive income (loss)	—	—	—	—	(48)	—	(48)
Total comprehensive income (loss)	—	—	—	(88)	(48)	1	(135)
Cumulative effects of adoption of new accounting standards	—	—	—	14	1	—	15
Employee stock purchase and stock compensation plans	2	—	56	—	—	—	56
Repurchase of Company common stock	(6)	—	(82)	(128)	—	—	(210)
Series A convertible preferred stock dividends	—	—	—	(49)	—	—	(49)
December 31, 2018	118	\$ 1	\$ 34	\$ 606	\$ (246)	\$ 4	\$ 399

The accompanying notes are an integral part of the Consolidated Financial Statements.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements

1. BASIS OF PRESENTATION AND SIGNIFICANT ACCOUNTING POLICIES

Description of Business NCR is a leading software- and services-led enterprise provider in the financial, retail, hospitality and telecommunications and technology industries, with business in 180 countries. NCR offers a range of solutions that help businesses of all sizes compete in an ever-evolving landscape of physical and digital consumers by providing software, advisory and consulting services, hardware, support and managed services that run businesses end to end. Our portfolio includes, but is not limited to, digital first offerings for banking, restaurants and retailers as well as payments, multi-vendor connected device services, automated teller machines (ATMs), point of sale (POS) terminals and self-service technologies. We also resell third-party networking products and provide related service offerings in the telecommunications and technology sectors. Our solutions create value for our customers by increasing productivity and allowing them to address consumer demand for convenience, value and individual service across different commerce channels using a digital first approach.

Use of Estimates The preparation of financial statements in accordance with generally accepted accounting principles in the United States (U.S. GAAP) requires management to make estimates and judgments that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements, and revenue and expenses during the periods reported. Actual results could differ from those estimates.

Subsequent Events The Company evaluated subsequent events through the date that our Consolidated Financial Statements were issued. Except as described below, no matters were identified that required adjustment of the Consolidated Financial Statements or additional disclosure.

On January 1, 2019, NCR began management on an industry basis, changing from the previous model of management on a solution basis. In accordance with U.S. GAAP, the Company expects to report its results for industry segments beginning in the first quarter of 2019. The new model is intended to drive improved execution on our software- and services-led business model.

Basis of Consolidation The consolidated financial statements include the accounts of NCR and its majority-owned subsidiaries. Long-term investments in affiliated companies in which NCR owns between 20% and 50%, and therefore, exercises significant influence, but which it does not control, are accounted for using the equity method. Investments in which NCR does not exercise significant influence (generally, when NCR has an investment of less than 20% and no significant influence, such as representation on the investee's board of directors) are accounted for using the cost method. All significant inter-company transactions and accounts have been eliminated. In addition, the Company is required to determine whether it is the primary beneficiary of economic income or losses that may be generated by variable interest entities in which the Company has such an interest. In circumstances where the Company determined it is the primary beneficiary, consolidation of that entity would be required. For the periods presented, no variable interest entities have been consolidated.

Reclassifications Certain prior-period amounts have been reclassified in the accompanying Consolidated Financial Statements and Notes thereto in order to conform to the current period presentation.

Revenue Recognition The Company records revenue, net of sales tax, when the following five steps have been completed:

- 1. Identification of the contract(s) with a customer
- 2. Identification of the performance obligation(s) in the contract

Determination of the transaction price

Allocation of the transaction price to the performance obligations in the contract

Recognition of revenue when, or as, we satisfy performance obligations

The Company records revenue when, or as, performance obligations are satisfied by transferring control of a promised good or service to the customer. The Company evaluates the transfer of control primarily from the customer's perspective where the customer has the ability to direct the use of and obtain substantially all of the remaining benefits from that good or service.

Our product revenue includes hardware and software which is generally recognized at a point in time, once all conditions for revenue recognition have been met. For hardware products, control is generally transferred when the customer has the ability to direct the use of and obtain substantially all of the remaining benefits of the products, which generally coincides with when the customer has assumed risk of loss of the goods sold. For software products, control is generally transferred when the customer takes possession of, or has complete access to, the software. In certain instances, customer acceptance is required prior to the

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

passage of title and risk of loss of the delivered products. In such cases, revenue is not recognized until the customer acceptance is obtained. Delivery, acceptance, and transfer of title and risk of loss generally occur in the same reporting period. NCR's customers may request that delivery and passage of title and risk of loss occur on a bill and hold basis. As of December 31, 2018 and 2017, the revenue recognized from bill and hold transactions approximated 1% of total revenue.

Our services revenue includes software as a service (SaaS), professional consulting, installation and maintenance support. SaaS primarily consists of fees to provide our customers access to our platform and cloud-based applications. Revenue from SaaS contracts is recognized as variable consideration directly allocated based on customer usage or on a ratable basis over the contract term beginning on the date that our service is made available to the customer. Professional consulting primarily consists of software implementation, integration, customization and optimization services. Revenue from professional consulting contracts that involve significant production, modification or customization of the software is recognized over time as the services are performed. Revenue from professional consulting contracts that does not involve significant production, modification or customization of the software is recognized when the services are completed or customer acceptance of the service is received, if required. For installation and maintenance, control is transferred as the services are provided or ratably over the service period, or, if applicable, after customer acceptance of the service. We apply the 'as invoiced' practical expedient, for performance obligations satisfied over time, if the amount we may invoice corresponds directly with the value to the customer of the Company's performance to date. This expedient permits us to recognize revenue in the amount we invoice the customer.

NCR frequently enters contracts that include multiple performance obligations, including hardware, software, professional consulting services, installation services and maintenance support services. For these arrangements, the Company allocates the transaction price, at contract inception, to each performance obligation on a relative standalone selling price basis. The primary method used to estimate standalone selling price is the price that the Company charges for that good or service when the Company sells it separately in similar circumstances to similar customers. If a contract includes software and services that involve significant production, modification or customization of the software, the services are not distinct from the software. For these contracts, both the software and professional services revenue is recognized over time using costs incurred to date relative to total estimated costs at completion to measure progress toward satisfying our performance obligations. Incurred cost represents work performed, which corresponds with, and thereby best depicts, the transfer of control to the customer. Estimated losses, if any, are recognized as soon as such losses become known.

The nature of our arrangements gives rise to several types of variable consideration including service level agreement credits, stock rotation rights, trade-in credits and volume-based rebates. At contract inception, we include this variable consideration in our transaction price when there is a basis to reasonably estimate the amount of the fee and it is probable there will not be a significant reversal. These estimates are generally made using the expected value method and a portfolio approach, based on historical experience, anticipated performance and our best judgment at the time. These estimates are reassessed at each reporting date. Because of our confidence in estimating these amounts, they are included in the transaction price of our contracts and the associated remaining performance obligations.

As a practical expedient, we do not adjust the promised amount of consideration for the effects of a significant financing component when we expect, at contract inception, that the period between our transfer of a promised product or service to a customer and when the customer pays for that product or service will be one year or less. Payment terms with our customers are established based on industry and regional practices and generally do not

exceed 30 days. We do not typically include extended payment terms in our contracts with customers.

The Company also does not adjust the transaction price for taxes collected from customers, as those amounts are netted against amounts remitted to government authorities.

We account for shipping and handling activities related to contracts with customers as costs to fulfill our promise to transfer the associated products, rather than as a separate performance obligation. Accordingly, we record amounts billed for shipping and handling costs as a component of net product sales, and classify such costs as a component of cost of products.

In addition to the standard product warranty, the Company periodically offers extended warranties to its customers in the form of product maintenance services. For contracts that are not separately priced but include product maintenance, the Company defers revenue at an amount based on the selling price, using objective and reliable evidence, and recognizes the deferred revenue over the service term. For separately priced product maintenance contracts, NCR defers the stated amount of the separately priced contract and recognizes the deferred revenue ratably over the service term.

Remaining Performance Obligations Remaining performance obligations represent the transaction price of orders for which

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

products have not been delivered or services have not been performed. As of December 31, 2018, the aggregate amount of the transaction price allocated to remaining performance obligations was approximately \$3.2 billion. The Company expects to recognize revenue on approximately three-quarters of the remaining performance obligations over the next 12 months, with the remainder recognized thereafter. The majority of our professional services are expected to be recognized over the next 12 months but this is contingent upon a number of factors, including customers' needs and schedules.

The Company has made two elections which affect the value of remaining performance obligations described above. We do not disclose remaining performance obligations for SaaS contracts where variable consideration is directly allocated based on usage or when the original expected length is one year or less.

Warranty and Sales Returns Provisions for product warranties and sales returns and allowances are recorded in the period in which NCR becomes obligated to honor the related right, which generally is the period in which the related product revenue is recognized. The Company accrues warranty reserves based upon historical factors such as labor rates, average repair time, travel time, number of service calls per machine and cost of replacement parts. When a sale is consummated, a warranty reserve is recorded based upon the estimated cost to provide the service over the warranty period. The Company accrues sales returns and allowances using percentages of revenue to reflect the Company's historical average of sales return claims.

Research and Development Costs Research and development costs primarily include payroll and benefit-related costs, contractor fees, facilities costs, infrastructure costs, and administrative expenses directly related to research and development support and are expensed as incurred, except certain software development costs are capitalized after technological feasibility of the software is established.

Advertising Advertising costs are recognized in selling, general and administrative expenses when incurred.

Stock Compensation Stock-based compensation represents the costs related to share-based awards granted to employees and non-employee directors. The Company's outstanding stock-based compensation awards are classified as equity. The Company measures stock-based compensation cost at the grant date, based on the estimated fair value of the award and recognizes the cost over the requisite service period. See Note 7, "Stock Compensation Plans" for further information on NCR's stock-based compensation plans.

Income Taxes Income tax expense is provided based on income before income taxes. Deferred income taxes reflect the impact of temporary differences between assets and liabilities recognized for financial reporting purposes and such amounts recognized for tax purposes. These deferred taxes are determined based on the enacted tax rates expected to apply in the periods in which the deferred assets or liabilities are expected to be settled or realized. NCR records valuation allowances related to its deferred income tax assets when it is more likely than not that some portion or all of the deferred income tax assets will not be realized.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being sustained upon examination by authorities. Interest and penalties related to uncertain tax positions are recognized as part of the provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law and until such time

that the related tax benefits are recognized.

On December 22, 2017, the U.S. enacted the Tax Cuts and Jobs Act of 2017 ("U.S. Tax Reform") that instituted fundamental changes to the taxation of multinational corporations. See Note 7, "Income Taxes" for additional information on the Company's assessment and related impacts.

Earnings Per Share Basic earnings per share (EPS) is calculated by dividing net income, less any dividends, accretion or decreration, redemption or induced conversion on our Series A Convertible Preferred Stock, by the weighted average number of shares outstanding during the reported period.

In computing diluted EPS, we adjust the numerator used in the basic EPS computation, subject to anti-dilution requirements, to add back the dividends (declared or cumulative undeclared) applicable to the Series A Convertible Preferred Stock. Such add-back would also include any adjustments to equity in the period to accrete the Series A Convertible Preferred Stock to its redemption price, or recorded upon a redemption or induced conversion. We adjust the denominator used in the basic EPS computation, subject to anti-dilution requirements, to include the dilution from potential shares resulting from the issuance of the Series A Convertible Preferred Stock, restricted stock units, and stock options.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

The holders of Series A Convertible Preferred Stock and unvested restricted stock units do not have nonforfeitable rights to common stock dividends or common stock dividend equivalents. Accordingly, the Series A Convertible Preferred Stock and unvested restricted stock units do not qualify as participating securities. See Note 8, "Stock Compensation Plans" for share information on NCR's stock compensation plans.

The components of basic earnings (loss) per share are as follows:

In millions, except per share amounts	Year ended December 31		
	2018	2017	2016
Income (loss) from continuing operations	\$(36)	\$237	\$283
Series A convertible preferred stock dividends	(49)	(47)	(49)
Deemed dividend on modification of Series A Convertible Preferred Stock	—	(4)	—
Deemed dividend on Series A Convertible Preferred Stock redemption	—	(58)	—
Net income (loss) from continuing operations attributable to NCR common stockholders	(85)	128	234
Loss from discontinued operations, net of tax	(52)	(5)	(13)
Net income (loss) attributable to NCR common stockholders	\$(137)	\$123	\$221
Denominator			
Basic weighted average number of shares outstanding	118.4	121.9	125.6
Basic earnings (loss) per share:			
From continuing operations	\$(0.72)	\$1.05	\$1.86
From discontinued operations	(0.44)	(0.04)	(0.10)
Total basic earnings (loss) per share	\$(1.16)	\$1.01	\$1.76

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

The components of diluted earnings (loss) per share are as follows:

In millions, except per share amounts	Year ended December 31		
	2018	2017	2016
Income (loss) from continuing operations	\$(36)	\$237	\$283
Series A convertible preferred stock dividends	(49)	(47)	—
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Loss from discontinued operations, net of tax	(52)	(5)	(13)
Series A convertible preferred stock dividends	—	—	(49)
Net income (loss) attributable to NCR common stockholders	\$(137)	\$123	\$221
Basic weighted average number of shares outstanding	118.4	121.9	125.6
Dilutive effect of as-if Series A Convertible Preferred Stock	—	—	28.2
Dilutive effect of employee stock options and restricted stock units	—	5.1	3.6
Denominator - from continuing operations	118.4	127.0	157.4
Basic weighted average number of shares outstanding	118.4	121.9	125.6
Dilutive effect of employee stock options and restricted stock units	—	5.1	3.6
Denominator - total	118.4	127.0	129.2
Diluted earnings (loss) per share:			
From continuing operations	\$(0.72)	\$1.01	\$1.80
From discontinued operations	(0.44)	(0.04)	(0.10)
Total diluted earnings (loss) per share	\$(1.16)	\$0.97	\$1.71

For 2018, diluted earnings (loss) per share from continuing operations and total diluted earnings (loss) per share, it is more dilutive to assume the Series A Convertible Preferred Stock is not converted to common stock and therefore weighted average outstanding shares of common stock are not adjusted by the as-if converted Series A Convertible Preferred Stock shown above because the effect would be anti-dilutive. If the as-if converted Series A Convertible Preferred Stock had been dilutive, approximately 28.3 million additional shares would have been included in the diluted weighted average number of shares outstanding for the year ended December 31, 2018. For 2018, there were 6.5 million weighted anti-dilutive restricted stock units outstanding.

For 2017, diluted earnings (loss) per share from continuing operations and total diluted earnings (loss) per share, it is more dilutive to assume the Series A Convertible Preferred Stock is not converted to common stock and therefore weighted average outstanding shares of common stock are not adjusted by the as-if converted Series A Convertible Preferred Stock shown above because the effect would be anti-dilutive. If the as-if converted Series A Convertible Preferred Stock had been dilutive, approximately 27.4 million additional shares, considering the existing and redeemed shares, would have been included in the diluted weighted average number of shares outstanding for the year ended December 31, 2017. For 2017, there were 0.8 million weighted anti-dilutive restricted stock units outstanding.

For 2016, diluted earnings (loss) per share from continuing operations, it is more dilutive to assume the Series A Convertible Preferred Stock is converted to common stock and therefore weighted average outstanding shares of common stock are adjusted by the as-if converted Series A Convertible Preferred Stock. For 2016, total diluted earnings (loss) per share, it is more dilutive to assume the Series A Convertible Preferred Stock is not converted to common stock and therefore weighted average outstanding shares of common stock are not adjusted by the as-if converted Series A Convertible Preferred Stock shown above because the effect would be anti-dilutive. Therefore, total diluted earnings (loss) per share less diluted earnings (loss) per share from continuing

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

operations does not equal diluted earnings (loss) per share from discontinued operations. For 2016, there were 0.4 million weighted anti-dilutive restricted stock units outstanding.

Cash and Cash Equivalents All short-term, highly liquid investments having original maturities of three months or less, including time deposits, are considered to be cash equivalents.

Accounts Receivable, net Accounts receivable, net includes amounts billed and currently due from customers as well as amounts unbilled which typically result from sales under contracts where revenue recognized exceeds the amount billed to the customer and where the Company has an unconditional right to consideration. The amounts due are stated at their net estimated realizable value. NCR establishes provisions for doubtful accounts using percentages of accounts receivable balances to reflect historical average credit losses and specific provisions for known issues, such as risks of default.

Allowance for Doubtful Accounts NCR establishes provisions for doubtful accounts using percentages of accounts receivable balances to reflect historical average credit losses and specific provisions for known issues.

Inventories Inventories are stated at the lower of cost or net realizable value, using the average cost method. Cost includes materials, labor and manufacturing overhead related to the purchase and production of inventories. Service parts are included in inventories and include reworkable and non-reworkable service parts. The Company regularly reviews inventory quantities on hand, future purchase commitments with suppliers and the estimated utility of inventory. If the review indicates a reduction in utility below carrying value, inventory is reduced to a new cost basis. Excess and obsolete write-offs are established based on forecasted usage, orders, technological obsolescence and inventory aging.

Contract Assets and Liabilities Contract assets include unbilled amounts where right to payment is not solely subject to the passage of time. Amounts may not exceed their net realizable value. Contract liabilities consist of advance payments, billings in excess of revenue recognized and deferred revenue.

Our contract assets and liabilities are reported in a net position on a contract-by-contract basis at the end of each reporting period. If the net position is a contract asset, the current portion is included in other current assets and the non-current portion is included in other assets in the Consolidated Balance Sheet. If the net position is a contract liability, the current portion is included in contract liabilities and the non-current portion is included in other liabilities in the Consolidated Balance Sheet.

The following table presents the net contract asset and contract liability balances as of December 31, 2018 and January 1, 2018:

In millions	Location in the Consolidated Balance Sheet	December 31, 2018	January 1, 2018
Current portion of contract assets	Other current assets	\$ 22	\$ 28
Current portion of contract liabilities	Contract liabilities	\$ 461	\$ 458
Non-current portion of contract liabilities	Other liabilities	\$ 85	\$ 95

During the twelve months ended December 31, 2018, the Company recognized \$355 million in revenue that was included in contract liabilities as of January 1, 2018.

Deferred Commissions Our incremental costs of obtaining a contract, which consist of certain sales commissions, primarily for our SaaS revenue, are deferred and amortized on a straight-line basis over the period of expected benefit. We determined the period of expected benefit by taking into consideration customer contracts, the estimated life of the customer relationship, including renewals when the renewal commission is not commensurate with the initial commission, the expected life of the underlying technology and other factors. We classify deferred commissions as current or non-current based on the timing of when we expect to recognize the expense. The current and non-current portions of deferred commissions are included in other current assets and other assets, respectively, in the Consolidated Balance Sheet as of December 31, 2018. Amortization of deferred commissions is included in selling, general and administrative expenses in the Consolidated Statements of Operations for the year ended December 31, 2018.

Set-up Fees and Costs Fees for the design, configuration, implementation and installation related to the software applications that are provided as a service are recognized over the contract term, which is generally 5 years. The related costs incurred that are determined to be incremental and recoverable contract-specific costs are deferred and amortized over the period of benefit, which is generally 7 years.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Settlement Processing Assets and Obligations Funds settlement refers to the process of transferring funds for sales and credits between card issuers and merchants. Depending on the type of transaction, either the credit card interchange system or the debit network is used to transfer the information and funds between the sponsoring bank and card issuing bank to complete the link between merchants and card issuers. In certain of our processing arrangements, merchant funding primarily occurs after the sponsoring bank receives the funds from the card issuer through the card networks, creating a net settlement obligation on the Company's Consolidated Balance Sheet. In a limited number of other arrangements, the sponsoring bank funds the merchants before it receives the net settlement funds from the card networks, creating a net settlement asset on the Company's Consolidated Balance Sheet. Additionally, certain of the Company's sponsoring banks collect the gross revenue from the merchants, pay the interchange fees and assessments to the credit card associations, collect their fees for processing and pay the Company a net residual payment representing the Company's fees for the services. In these instances, the Company does not reflect the related settlement processing assets and obligations in its Consolidated Balance Sheet.

Settlement processing assets consist primarily of our portion of settlement assets due from customers and receivables from merchants for the portion of the discount fee related to reimbursement of the interchange expense, our receivable from the processing bank for transactions we have funded merchants in advance of receipt of card association funding, merchant reserves held, sponsoring bank reserves and exception items, such as customer chargeback amounts receivable from merchants. Settlement processing obligations consist primarily of merchant reserves, our liability to the processing bank for transactions for which we have received funding from the members but have not funded merchants and exception items. Settlement processing assets are recorded within other current assets and settlement processing liabilities are recorded within other current liabilities in the Consolidated Balance Sheet. As of December 31, 2018, settlement processing assets were \$30 million and settlement processing liabilities were \$28 million. Settlement receivables are generally collected within four business days. Settlement obligations are generally paid within three business days, regardless of when the related settlement receivables are collected.

Capitalized Software Certain direct development costs associated with internal-use software are capitalized within other assets and amortized over the estimated useful lives of the resulting software. NCR typically amortizes capitalized internal-use software on a straight-line basis over four to seven years beginning when the asset is substantially ready for use, as this is considered to approximate the usage pattern of the software. When it becomes probable that internal-use software being developed will not be completed or placed into service, the internal-use software is reported at the lower of the carrying amount or fair value.

Costs incurred for the development of software that will be sold, leased or otherwise marketed are capitalized when technological feasibility has been established. These costs are included within other assets and are amortized on a sum-of-the-years' digits or straight-line basis over the estimated useful lives ranging from three to five years, using the method that most closely approximates the sales pattern of the software. Amortization begins when the product is available for general release. Costs capitalized include direct labor and related overhead costs. Costs incurred prior to technological feasibility or after general release are expensed as incurred. NCR performs periodic reviews to ensure that unamortized program costs remain recoverable from future revenue. If future revenue does not support the unamortized program costs, the amount by which the unamortized capitalized cost of a software product exceeds the net realizable value is written off.

The following table identifies the activity relating to total capitalized software:

In millions	2018	2017	2016
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Beginning balance as of January 1	\$ 366	\$ 345	\$ 311
Capitalization	170	166	154
Amortization	(160)	(145)	(118)
Impairment	(51)	—	(2)
Ending balance as of December 31	\$ 325	\$ 366	\$ 345

During the year ended December 31, 2018, we recorded the write-off of certain internal and external use software capitalization projects that are no longer considered strategic based on review by the new management team and as a result, the projects have been abandoned.

Goodwill and Other Intangible Assets Goodwill represents the excess of purchase price over the fair value of the net tangible and identifiable intangible assets of businesses acquired. Goodwill is tested at the reporting unit level for impairment on an annual basis during the fourth quarter or more frequently if certain events occur indicating that the carrying value of goodwill may be impaired. A significant amount of judgment is involved in determining if an indicator of impairment has occurred. Such indicators

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

may include a decline in expected cash flows, a significant adverse change in legal factors or in the business climate, a decision to sell a business, unanticipated competition, or slower growth rates, among others. During the second quarter of 2018, we determined there was an indication that the carrying value of the net assets assigned to the Hardware reporting unit may not be recoverable and completed an impairment assessment of goodwill. As a result of the assessment, we recorded an impairment charge for the full value of the goodwill assigned to the Hardware reporting unit. Refer to Note 4, "Goodwill and Purchased Intangible Assets" for further discussion.

In the evaluation of goodwill for impairment, we have the option to perform a qualitative assessment to determine whether further impairment testing is necessary or to perform a quantitative assessment by comparing the fair value of a reporting unit to its carrying amount, including goodwill. Under the qualitative assessment, an entity is not required to calculate the fair value of a reporting unit unless the entity determines that it is more likely than not that its fair value is less than its carrying amount. If under the quantitative assessment the fair value of a reporting unit is less than its carrying amount, then the amount of the impairment loss, if any, is determined based on the amount by which the carrying amount exceeds the fair value up to the total value of goodwill assigned to the reporting unit. Fair values of the reporting units are estimated using a weighted methodology considering the output from both the income and market approaches. The income approach incorporates the use of discounted cash flow (DCF) analysis. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including revenue growth, operating income margin and discount rate. Several of these assumptions vary among reporting units. The cash flow forecasts are generally based on approved strategic operating plans. The market approach is performed using the Guideline Public Companies (GPC) method which is based on earnings multiple data. We perform a reconciliation between our market capitalization and our estimate of the aggregate fair value of the reporting units, including consideration of a control premium. During the fourth quarter of each year presented, we performed our annual impairment assessment of goodwill which did not indicate that an impairment existed. Refer to Note 4, "Goodwill and Purchased Intangible Assets" for further discussion.

Acquired intangible assets other than goodwill are amortized over their weighted average amortization period unless they are determined to be indefinite. Acquired intangible assets are carried at cost, less accumulated amortization. For intangible assets purchased in a business combination, the estimated fair values of the assets received are used to establish the carrying value. The fair value of acquired intangible assets is determined using common techniques, and the Company employs assumptions developed using the perspective of a market participant.

Property, Plant and Equipment Property, plant and equipment and leasehold improvements are stated at cost less accumulated depreciation. Depreciation is computed over the estimated useful lives of the related assets primarily on a straight-line basis. Machinery and other equipment are depreciated over 3 to 20 years and buildings over 25 to 45 years. Leasehold improvements are depreciated over the life of the lease or the asset, whichever is shorter. Assets classified as held for sale are not depreciated. Upon retirement or disposition of property, plant and equipment, the related cost and accumulated depreciation or amortization are removed from the Company's accounts, and a gain or loss is recorded. Depreciation expense related to property, plant and equipment was \$81 million, \$86 million, and \$90 million for the years ended December 31, 2018, 2017, and 2016, respectively.

Valuation of Long-Lived Assets Long-lived assets such as property, plant and equipment and finite-lived intangible assets are reviewed for impairment when events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable or in the period in which the held for sale criteria are met. For assets held and used, this analysis consists of comparing the asset's carrying value to the expected future cash flows to be generated from the asset on an undiscounted basis. If the carrying amount of the asset is determined not to be recoverable, a write-down

to fair value is recorded. Fair values are determined based on quoted market values, discounted cash flows, or external appraisals, as applicable. Long-lived assets are reviewed for impairment at the individual asset or the asset group level for which the lowest level of independent cash flows can be identified. Refer to Note 4, "Goodwill and Purchased Intangible Assets" for further discussion.

Pension, Postretirement and Postemployment Benefits NCR has significant pension, postretirement and postemployment benefit costs, which are developed from actuarial valuations. Actuarial assumptions are established to anticipate future events and are used in calculating the expense and liabilities relating to these plans. These factors include assumptions the Company makes about interest rates, expected investment return on plan assets, rate of increase in healthcare costs, total and involuntary turnover rates, and rates of future compensation increases. In addition, NCR also uses subjective factors, such as withdrawal rates and mortality rates to develop the Company's valuations. NCR generally reviews and updates these assumptions on an annual basis. NCR is required to consider current market conditions, including changes in interest rates, in making these assumptions. The actuarial assumptions that NCR uses may differ materially from actual results due to changing market and economic conditions, higher or lower withdrawal rates, or longer or shorter life spans of participants. These differences may result in a significant impact to the amount of pension, postretirement or postemployment benefits expense, and the related assets and liabilities, the Company has recorded or may record.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Environmental and Legal Contingencies In the normal course of business, NCR is subject to various proceedings, lawsuits, claims and other matters, including, for example, those that relate to the environment and health and safety, labor and employment, employee benefits, import/export compliance, intellectual property, data privacy and security, product liability, commercial disputes and regulatory compliance, among others. Additionally, NCR is subject to diverse and complex laws, regulations, and standards including those relating to corporate governance, public disclosure and reporting, environmental safety and the discharge of materials into the environment, product safety, import and export compliance, data privacy and security, antitrust and competition, government contracting, anti-corruption, and labor and human resources, which are rapidly changing and subject to many possible changes in the future. Compliance with these laws and regulations, including changes in accounting standards, taxation requirements, and federal securities laws among others, may create a substantial burden on, and substantially increase the costs to NCR or could have an impact on NCR's future operating results. NCR believes that the amounts provided in its Consolidated Financial Statements are adequate in light of the probable and estimable liabilities. However, there can be no assurances that the actual amounts required to satisfy alleged liabilities from various lawsuits, claims, legal proceedings and other matters, including the Fox River and Kalamazoo River environmental matters discussed in Note 10, "Commitments and Contingencies" and to comply with applicable laws and regulations, will not exceed the amounts reflected in NCR's Consolidated Financial Statements or will not have a material adverse effect on the Company's consolidated results of operations, financial condition or cash flows. Any costs that may be incurred in excess of those amounts provided as of December 31, 2018 cannot currently be reasonably determined or are not currently considered probable.

Legal fees and expenses related to loss contingencies are typically expensed as incurred, except for certain costs associated with NCR's environmental remediation obligations. Costs and fees associated with litigating the extent and type of required remedial actions and the allocation of remediation costs among potentially responsible parties are typically included in the measurement of the environmental remediation liabilities.

Leases The Company accounts for material escalation clauses, free or reduced rents and landlord incentives contained in operating type leases on a straight-line basis over the lease term, including any reasonably assured lease renewals. For leasehold improvements that are funded by the landlord, the Company records the incentive as deferred rent. The deferred rent is then amortized as reductions to lease expense over the lease term. For capital leases where NCR is the lessee, we record an amortizable debt and a related fixed asset in the Consolidated Balance Sheet.

Foreign Currency For many NCR international operations, the local currency is designated as the functional currency. Accordingly, assets and liabilities are translated into U.S. Dollars at year-end exchange rates, and revenue and expenses are translated at average exchange rates prevailing during the year. Currency translation adjustments from local functional currency countries resulting from fluctuations in exchange rates are recorded in other comprehensive income. Where the U.S. Dollar is the functional currency, remeasurement adjustments are recorded in other (expense), net.

Derivative Instruments In the normal course of business, NCR enters into various financial instruments, including derivative financial instruments. The Company accounts for derivatives as either assets or liabilities in the Consolidated Balance Sheets at fair value and recognizes the resulting gains or losses as adjustments to earnings or other comprehensive income. For derivative instruments that are designated and qualify as hedging instruments, the Company formally documents the relationship between hedging instruments and hedged items, as well as the risk management objective and strategy for undertaking various hedge transactions. Hedging activities are transacted only with highly rated institutions, reducing exposure to credit risk in the event of nonperformance. Additionally, the

Company completes assessments related to the risk of counterparty nonperformance on a regular basis.

The accounting for changes in fair value of a derivative instrument depends on whether it has been designated and qualifies as part of a hedging relationship, and further, on the type of hedging relationship. For those derivative instruments that are designated and qualify as hedging instruments, the Company has designated the hedging instrument, based on the exposure being hedged, as a fair value hedge, a cash flow hedge or a hedge of a net investment in a foreign operation. For derivative instruments designated as fair value hedges, the effective portion of the hedge is recorded as an offset to the change in the fair value of the hedged item, and the ineffective portion of the hedge, if any, is recorded in the Consolidated Statement of Operations. For derivative instruments designated as cash flow hedges and determined to be highly effective, the gains or losses are deferred in other comprehensive income and recognized in the determination of income as adjustments of carrying amounts when the underlying hedged transaction is realized, canceled or otherwise terminated. When hedging certain foreign currency transactions of a long-term investment nature (net investments in foreign operations) gains and losses are recorded in the currency translation adjustment component of accumulated other comprehensive loss. Gains and losses on foreign exchange contracts that are not used to hedge currency transactions of a long-term investment nature, or that are not designated as cash flow or fair value hedges, are recognized in other (expense), net as exchange rates change.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Fair Value of Assets and Liabilities Fair value is defined as an exit price, representing an amount that would be received to sell an asset or the amount paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the guidance prioritizes the inputs used to measure fair value into the following three-tier fair value hierarchy:

Level 1: Unadjusted quoted prices in active markets for identical assets or liabilities

Level 2: Unadjusted quoted prices in active markets for similar assets or liabilities, unadjusted quoted prices for identical or similar assets or liabilities in markets that are not active or inputs, other than quoted prices in active markets, that are observable either directly or indirectly

Level 3: Unobservable inputs for which there is little or no market data

Assets and liabilities are classified based on the lowest level of input that is significant to the fair value measurements. The Company reviews the fair value hierarchy classification on a quarterly basis. Changes to the observability of valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy.

NCR measures its financial assets and financial liabilities at fair value based on one or more of the following three valuation techniques:

Market approach: Prices and other relevant information generated by market transactions involving identical or comparable assets or liabilities.

Cost approach: Amount that would be required to replace the service capacity of an asset (replacement cost).

Income approach: Techniques to convert future amounts to a single present amount based upon market expectations (including present value techniques, option pricing and excess earnings models).

We regularly review our investments to determine whether a decline in fair value, if any, below the cost basis is other than temporary. If the decline in the fair value is determined to be other than temporary, the cost basis of the security is written down to fair value and the amount of the write-down is included in the Consolidated Statement of Operations. For qualifying investments in debt or equity securities, a temporary impairment charge would be recognized in other comprehensive income (loss).

Redeemable Noncontrolling Interests and Related Party Transactions In 2011, we sold a 49% voting equity interest in NCR Brasil - Indústria de Equipamentos para Automação S.A., a subsidiary of the Company (NCR Manaus) to Scopus Tecnologia Ltda. (Scopus). Under our investment agreements with Scopus, Scopus may elect to sell its shares in NCR Manaus at the then-current fair value to a third party that is not a competitor of NCR. If Scopus is unable to locate a buyer, Scopus may require NCR to purchase its noncontrolling interest for its then-current fair value.

We recognized \$59 million, \$79 million and \$82 million in revenue related to Banco Bradesco SA (Bradesco), the parent of Scopus, for the years ended December 31, 2018, 2017 and 2016, respectively, and we had \$15 million and \$18 million in receivables outstanding from Bradesco as of December 31, 2018 and 2017, respectively.

Recent Accounting Pronouncements

Issued

In February 2016, the Financial Accounting Standards Board (FASB) issued a new leasing standard that supersedes prior guidance related to accounting for leases. The guidance is intended to increase transparency and comparability among organizations by recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about leasing arrangements. The standard is effective for the first interim period within annual periods beginning after December 15, 2018, with early adoption permitted. The standard is required to be adopted using the modified retrospective approach and NCR plans to apply the provisions of the new leasing standard at the effective date rather than at the beginning of the earliest period presented under the transition method provided. The standard also includes options to elect a number of practical expedients. We plan to elect the package of practical expedients to not reassess prior conclusions related to contracts containing leases, lease classification and initial direct costs, as well as the practical expedient to not reassess certain land easements. We do not plan to elect the practical expedient to use hindsight when determining the lease term. The standard also provides a practical expedient that permits lessees to make an accounting policy election by class of underlying asset to account for each separate lease component of a contract and its associated non-lease components as a single lease component. Where we are the lessee, we plan to make an accounting policy election on

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

and after the effective date to combine the lease and non-lease components as a single component for the majority of our classes of underlying assets. We purchased and are currently in the advanced stages of user acceptance testing of our new lease accounting software. The software is not yet fully operational. We are also in the process of making appropriate changes to our business processes, systems and controls to support the new standard, and we are continuing to evaluate the impact of the standard on our consolidated financial statements and related disclosures. At this time the Company cannot estimate the quantitative impact of adopting the new standard, but it is expected to have a material effect to the total assets and total liabilities reported on the consolidated balance sheet, and is not expected to have a material effect to the consolidated statement of operations or the consolidated statement of cash flows.

In August 2018, the FASB issued an accounting standard update with new guidance on fair value measurement disclosure requirements which requires the disclosure of additions to and transfers into and out of Level 3 of the fair value hierarchy. The update also requires disclosure about the uncertainty in measurement as of the reporting date. The new standard is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019 with early adoption permitted. The impact of adopting this guidance is not expected to have a material impact on our consolidated financial statements.

In August 2018, the FASB issued additional guidance for an accounting update that was issued in April 2015 related to accounting for implementation costs incurred in a cloud computing arrangement that is also a service contract. If a cloud computing arrangement also includes an internal-use software, an intangible asset is recognized and a liability is recognized for any payments related to the software license. However, if a cloud computing arrangement does not include a software license, the entity should account for the arrangement as a service contract and any fees associated with the service are expensed as incurred. The new standard is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2019, with early adoption permitted. The impact of adopting this guidance is not expected to have a material impact on our consolidated financial statements.

In October 2018, the FASB issued an accounting standards update for hedge accounting guidance that was issued in August 2017 which we adopted during the first quarter of this year. This guidance allows for the use of a broad Treasury repurchase agreement financing rate which is referred to as the Secured Overnight Financing Rate (SOFR) to be used as an additional benchmark rate for hedge accounting purposes. This guidance is effective for entities that have already adopted the amendments of the hedge accounting guidance referenced above for fiscal years beginning after December 15, 2018 on a prospective basis for qualifying new or re-designated hedging relationships entered into on or after the date of adoption. The adoption of this accounting standard update is not expected to have a material effect on our consolidated financial statements.

Adopted

In May 2014, the FASB issued a new revenue recognition standard that superseded existing revenue recognition guidance. The core principle of the guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The standard was effective for the first interim period within annual periods beginning after December 15, 2017, with early adoption permitted for annual periods beginning after December 15, 2016, and can be adopted either retrospectively to each prior reporting period presented (“full retrospective method”) or as a cumulative effect adjustment as of the date of adoption (“modified retrospective method”). Effective January 1, 2018, we adopted the standard using the modified retrospective method applied to contracts that were not complete as of the date of adoption and recorded a cumulative adjustment to increase retained

earnings by \$2 million. Adoption of the new standard resulted in changes to our accounting policies for revenue recognition and deferred commissions. Refer to Note 2, "Revenue Recognized Under Previous Guidance", for presentation of what revenue would have been in the current periods had the Company continued to recognize revenue under the previous accounting guidance.

In August 2016, the FASB issued an accounting standards update which provides guidance regarding the classification of certain cash receipts and cash payments on the statement of cash flows, where specific guidance is provided for issues not previously addressed. This guidance is effective for annual reporting periods, including interim reporting within those periods, beginning after December 15, 2017, with early adoption permitted, and is required to be adopted using a retrospective approach. The adoption of this accounting standards update did not have a material effect on the Company's statement of cash flows.

In October 2016, the FASB issued an accounting standards update which requires the recognition of the income tax consequences of an intra-entity transfer of an asset, other than inventory, when the transfer occurs. This standard is effective for interim and annual periods beginning after December 15, 2017. Early adoption is permitted. Effective January 1, 2018, we adopted the standard using the modified retrospective method and recorded a cumulative adjustment to increase retained earnings by \$13 million.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In November 2016, the FASB issued an accounting standards update which clarifies how entities should present restricted cash and restricted cash equivalents in the statement of cash flows. The guidance requires entities to show the changes in the total of cash, cash equivalents, restricted cash and restricted cash equivalents in the statement of cash flows. The accounting standards update is required to be adopted for annual periods beginning after December 15, 2017, including interim periods within that annual period. The amendment is to be applied retrospectively with early adoption permitted. The adoption of this accounting standards update did not have a material effect on the Company's statement of cash flows.

In January 2017, the FASB issued an accounting standards update which clarifies the definition of a business which is used across several areas of accounting. The area expected to see the most change is the evaluation of whether a transaction should be accounted for as an acquisition (or disposal) of assets, or as a business combination. The new guidance clarifies that to be a business there must also be at least one substantive process, and narrows the definition of outputs by more closely aligning it with how outputs are described in the new revenue recognition standard. The accounting standards update is required to be adopted for annual periods beginning after December 15, 2017, including interim periods within that annual period. The amendment is to be applied prospectively with early adoption permitted. The adoption of this standard did not have a material effect on our financial condition, results of operations or disclosures, as the standard applies only to businesses acquired after the adoption date.

In January 2017, the FASB issued an accounting standards update with new guidance intended to simplify the subsequent measurement of goodwill. The standards update eliminates the requirement for an entity to calculate the implied fair value of goodwill to measure a goodwill impairment charge. Instead, an entity will perform its annual, or interim, goodwill impairment testing by comparing the fair value of a reporting unit with its carrying amount and recording an impairment charge for the amount by which the carrying amount exceeds the fair value. The standards update is effective prospectively for annual and interim goodwill impairment testing performed in fiscal years beginning after December 15, 2019, which we early adopted as of January 1, 2018. Refer to Note 4, "Goodwill and Purchased Intangible Assets" for further discussion.

In March 2017, the FASB issued an accounting standards update with new guidance on an employer's presentation of defined benefit retirement costs in the income statement. Employers will present the service cost component of net periodic benefit cost in the same income statement line item(s) as other employee compensation costs arising from services rendered during the period. Only the service cost component will be eligible for capitalization in assets. Employers will present the other components of the net periodic benefit cost separately from the line item(s) that includes the service cost and outside of any subtotal of operating income, if one is presented. These components will not be eligible for capitalization in assets. The guidance is effective for fiscal years beginning after December 15, 2017, and interim periods therein, with early adoption permitted. The adoption of this accounting standards update did not have a material effect on the Company's net income, cash flows or financial condition.

In May 2017, the FASB issued an accounting standards update which clarifies when to account for a change to the terms or conditions of a share-based payment award as a modification. This update requires modification only if the fair value, vesting conditions or the classification of the award changes as a result of the change in terms or conditions. This guidance is effective for fiscal years beginning after December 15, 2017, and interim periods therein, with early adoption permitted. The adoption of this accounting standards update did not have a material effect on the Company's net income, cash flows or financial condition.

In August 2017, the FASB issued an accounting standards update which simplifies certain aspects of hedge accounting and improves disclosures of hedging arrangements through the elimination of the requirement to separately measure and report hedge ineffectiveness. This update generally requires the entire change in the fair value of a hedging instrument to be presented in the same income statement line as the hedged item in order to align financial reporting of hedge relationships with economic results. Entities must apply the amendments to cash flow and net investment hedge relationships that exist on the date of adoption using a modified retrospective approach. The presentation and disclosure requirements must be applied prospectively. This guidance is effective for fiscal years beginning after December 15, 2018, and interim periods therein, with early adoption permitted. The adoption of this accounting standards update did not have a material effect on the Company's net income, cash flows or financial condition.

In February 2018, the FASB issued an accounting standards update which permits entities to reclassify tax effects stranded in accumulated other comprehensive income as a result of the enactment of the Tax Cuts and Jobs Act (U.S. Tax Reform) to retained earnings. Entities can elect to apply the guidance retrospectively or in the period of adoption. This guidance is effective for fiscal years beginning after December 15, 2018, and interim periods therein, with early adoption permitted. The adoption of this accounting standards update did not have a material effect on the Company's net income, cash flows or financial condition.

In March 2018, the FASB issued an accounting standards update which allowed SEC registrants to record provisional amounts in earnings for the year ended December 31, 2017 due to the complexities involved in accounting for the enactment of U.S. Tax Reform. The standard was effective upon issuance. The Company recognized the estimated income tax effects of U.S. Tax Reform

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

in its 2017 Consolidated Financial Statements in accordance with SEC Staff Accounting Bulletin No. 118 (SAB No. 118). Refer to Note 7, "Income Taxes", for further information regarding the assessment of the impact of U.S. Tax Reform in the years ended December 31, 2018 and 2017.

In August 2018, the FASB issued an accounting standards update which require additional disclosures related to the weighted-average interest crediting rates for cash balance plans and an explanation for the reasons for significant gains and losses related to changes in the benefit obligation for the period. The new standard is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020 on a retrospective basis with early adoption permitted. The adoption of this accounting standards update did not have a material effect on the Company's net income, cash flows or financial condition.

2. REVENUE RECOGNIZED UNDER PREVIOUS GUIDANCE

As noted in Note 1, "Basis of Presentation and Significant Accounting Policies" the Company adopted the new revenue recognition guidance effective January 1, 2018, using the modified retrospective approach. As a result, we recognized the cumulative effect of initially applying the new revenue standard as an adjustment to the opening balance of retained earnings as of January 1, 2018. Adopting the new standard primarily impacted the deferral of incremental commission costs of obtaining SaaS contracts with customers. Other changes impact the timing of recognition for term-based software license sales and renewals, and estimating variable consideration at contract inception.

The comparative information has not been restated and continues to be reported under the accounting standards in effect for those periods. As such, the following table presents the results under the previous guidance:

In millions, except per share amounts	For the year ended December 31, 2018		
	Under Current Guidance	Adjustments	Under Previous Guidance
Consolidated Statement of Operations			
Product revenue	\$2,341	\$ (32)	\$ 2,309
Cost of products	1,988	(16)	1,972
Selling, general and administrative expenses	1,005	1	1,006
Total operating expenses	6,214	(15)	6,199
Income (loss) from operations	191	(17)	174
Loss from continuing operations before income taxes	39	(17)	22
Income tax benefit	73	(4)	69
Loss from continuing operations	(34)	(13)	(47)
Net loss	(86)	(13)	(99)
Net loss attributable to NCR	\$(88)	\$ (13)	\$(101)
Loss per common share from continuing operations			
Basic	\$(0.72)	\$ (0.11)	\$(0.83)
Diluted	\$(0.72)	\$ (0.11)	\$(0.83)
Net loss per common share			
Basic	\$(1.16)	\$ (0.11)	\$(1.27)
Diluted	\$(1.16)	\$ (0.11)	\$(1.27)

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions	As of December 31, 2018		
	Under	Current Adjustments	Under
	Guidance	Guidance	Previous
			Guidance
Consolidated Balance Sheet			
Assets			
Accounts receivable, net	\$1,356	\$ 22	\$ 1,378
Other current assets	397	(9)	388
Total current assets	3,023	13	3,036
Deferred income taxes	448	5	453
Other assets	504	(14)	490
Total Assets	\$7,761	\$ 4	\$ 7,765
Liabilities			
Contract liabilities	\$461	\$ 18	\$ 479
Other current liabilities	501	3	504
Total current liabilities	2,282	21	2,303
Total liabilities	6,489	21	6,510
Retained earnings	606	(17)	589
Total NCR stockholders' equity	395	(17)	378
Total stockholders' equity	399	(17)	382
Total liabilities and stockholders' equity	\$7,761	\$ 4	\$ 7,765

3. BUSINESS COMBINATIONS AND DIVESTITURES

JetPay Acquisition

On December 6, 2018, NCR completed its acquisition of JetPay Corporation ("JetPay"), for which it purchased (i) all outstanding shares of common stock at a price of \$5.05 per share, (ii) shares of Series A Preferred Stock at \$5.05 per share, (iii) shares of Series A-1 Convertible Preferred Stock at a price of \$600 per share, (iv) shares of Series A-2 Convertible Preferred Stock of JetPay at a price of \$600 per share, and (v) transaction costs paid on behalf of the seller for an aggregate purchase price of \$193 million which was paid in cash. As a result of the acquisition, JetPay became a fully owned subsidiary of NCR.

JetPay is a provider of end-to-end payment processing and human capital management solutions. The acquisition is consistent with NCR's continued transformation to a software- and services- driven business. JetPay complements and extends our existing capabilities by allowing us to monetize transactions via payments.

Recording of Assets Acquired and Liabilities Assumed The fair value of consideration transferred to acquire JetPay was allocated to the identifiable assets acquired and liabilities assumed based upon their estimated fair values as of the date of the acquisition as set forth below. This allocation is open as of December 31, 2018.

The allocation of the purchase price for JetPay is as follows:

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In millions	Fair Value
Cash acquired	\$4
Tangible assets acquired	76
Acquired intangible assets other than goodwill	109
Acquired goodwill	96
Deferred tax liabilities	(16)
Liabilities assumed	(76)
Total purchase consideration	\$ 193

69

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Goodwill represents the future economic benefits arising from other assets acquired that could not be individually separately recognized. The goodwill arising from the acquisition consists of revenue synergies expected from combining the operations of NCR and JetPay. It is expected that none of the goodwill recognized in connection with the acquisition will be deductible for tax purposes. The goodwill arising from the acquisition has been allocated to our Software segment. Refer to Note 4, "Goodwill and Purchased Intangible Assets" for the carrying amounts of goodwill by segment as of December 31, 2018.

The following table sets forth the components of the intangible assets acquired as of the acquisition date:

	Estimated Fair Value (In millions)	Weighted Average Amortization Period ⁽¹⁾ (In years)
Direct customer relationships	\$ 69	14
Technology - Software	39	9
Tradenames	1	1
Total acquired intangible assets	\$ 109	

⁽¹⁾ Determination of the weighted average period of the individual categories of intangible assets was based on the nature of applicable intangible asset and the expected future cash flows to be derived from the intangible asset. Amortization of intangible assets with definite lives is recognized over the period of time the assets are expected to contribute to future cash flows.

In connection with the closing of the acquisition, the Company incurred approximately \$4 million of transactions costs, which has been included within selling, general and administrative expenses in the Consolidated Statements of Operations for the year ended December 31, 2018.

Unaudited Pro forma Information The following unaudited pro forma information presents the consolidated results of NCR and JetPay for the years ended December 31, 2017 and 2018. The unaudited pro forma information is presented for illustrative purposes only. It is not necessarily indicative of the results of operations of future periods, or the results of operations that actually would have been realized had the entities been a single company during the periods presented or the results that the combined company will experience after the acquisition. The unaudited pro forma information does not give effect to the potential impact of current financial conditions, regulatory matters or any anticipated synergies, operating efficiencies or cost savings that may be associated with the acquisition. The unaudited pro forma information also does not include any integration costs or remaining future transaction costs that the companies may incur related to the acquisition as part of combining the operations of the companies.

The unaudited pro forma consolidated results of operations, assuming the acquisition had occurred on January 1, 2017, are as follows:

In millions	2018	2017
Revenue	\$6,468	\$6,592
Net income attributable to NCR	\$(46)	\$217

The unaudited pro forma results for the year ended December 31, 2018 include:

\$4 million, net of tax, in additional amortization expense for acquired intangible assets;
\$4 million, net of tax, in eliminated transaction costs as if those costs were incurred in the prior year period; and
\$7 million, net of tax, in additional interest expense from the incremental borrowings under the Senior Secured Credit Facility.

The unaudited pro forma results for the year ended December 31, 2017, include:

\$5 million, net of tax, in additional amortization expense for acquired intangible assets;
\$4 million, net of tax, in transaction costs; and
\$7 million, net of tax, in additional interest expense from the incremental borrowings under the Senior Secured Credit Facility.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Other acquisitions

During the third quarter of 2018, we completed the acquisition of Zipscene LLC which aggregates and enriches data from hospitality customers to provide marketing insights back to our customers and will enable us to increase data monetization. During the fourth quarter of 2018, we completed its acquisition of StopLift Checkout Vision Systems ("StopLift"). StopLift designs Artificial Intelligence technology which identifies fraudulent behavior at the point-of-sale and in self-checkout systems.

4. GOODWILL AND PURCHASED INTANGIBLE ASSETS

Goodwill

The carrying amounts of goodwill by segment are included in the tables below. Foreign currency fluctuations are included within other adjustments.

In millions	January 1, 2018						December 31, 2018					
	Accumulated			Additions	Impairment	Other	Accumulated			Additions	Impairment	Other
	Goodwill	Impairment	Total				Goodwill	Impairment	Total			
	Losses						Losses					
Software	\$1,944	\$ (7)	)	\$1,937	\$ 107	\$ —	\$ (10)	\$2,041	\$ (7)	)	\$2,034	
Services	658	—		658	—	—	—	658	—		658	
Hardware	162	(16)	)	146	—	(146)	)	—	162	(162)	)	—
Total goodwill	\$2,764	\$ (23)	)	\$2,741	\$ 107	\$ (146)	)	\$ (10)	\$2,861	\$ (169)	)	\$2,692

In millions	January 1, 2017						December 31, 2017					
	Accumulated			Additions	Impairment	Other	Accumulated			Additions	Impairment	Other
	Goodwill	Impairment	Total				Goodwill	Impairment	Total			
	Losses						Losses					
Software	\$1,930	\$ (7)	)	\$1,923	\$ —	\$ 14	\$1,944	\$ (7)	)	\$1,937		
Services	658	—		658	—	—	—	658	—		658	
Hardware	162	(16)	)	146	—	—	—	162	(16)	)	146	
Total goodwill	\$2,750	\$ (23)	)	\$2,727	\$ —	\$ 14	\$2,764	\$ (23)	)	\$2,741		

Late in the quarter ended June 30, 2018, we determined there was an indication that the carrying value of the net assets assigned to the Hardware reporting unit may not be recoverable. This determination was based on the lowering of our full year forecast for 2018, driven by reduced revenue and gross margin rates expected for the third and fourth quarters of 2018, and the resulting impact on the current year and future cash flow projections of the Hardware reporting unit.

Given the undiscounted cash flows of the asset group, which we determined to be at the reporting unit level, were below the carrying value of the net assets, we recorded an impairment charge for the difference between the fair value and the carrying value of the long-lived assets. The fair value of the long-lived assets was determined based on the nature of the asset through either third party appraisals, replacement cost or discounted cash flow analysis.

As a result, in the three months ended June 30, 2018 the Company recorded impairment charges of \$21 million related to property, plant and equipment held and used in NCR's hardware reporting unit, \$16 million related to purchased

intangibles and \$146 million for goodwill assigned to the Hardware reporting unit. These charges were recorded in the line item asset impairment charges in our Consolidated Statement of Operations for the year ended December 31, 2018.

As discussed in Note 1, “Basis of Presentation and Significant Accounting Policies,” NCR completed the annual goodwill impairment test during the fourth quarter of 2018, which did not indicate an impairment existed for the Software or Services segments.

Purchased Intangible Assets

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

NCR's purchased intangible assets were specifically identified when acquired, and are deemed to have finite lives. These assets are reported in intangibles, net in the Consolidated Balance Sheets. The gross carrying amount and accumulated amortization for NCR's identifiable intangible assets were as set forth in the table below:

In millions	Amortization Period (in Years)	December 31, 2018		December 31, 2017	
		Gross Carrying Amount	Accumulated Amortization	Gross Carrying Amount	Accumulated Amortization
Identifiable intangible assets					
Reseller & customer relationships	1 - 20	\$726	\$ (218)	\$659	\$ (170)
Intellectual property	2 - 8	443	(373)	410	(351)
Customer contracts	8	89	(87)	89	(81)
Tradenames	2 - 10	75	(60)	73	(51)
Total identifiable intangible assets		\$1,333	\$ (738)	\$1,231	\$ (653)

The aggregate amortization expense (actual and estimated) for identifiable intangible assets for the following periods is:

In millions	For the year ended December 31, 2018	For the years ended December 31 (estimated)				
		2019	2020	2021	2022	2023
Amortization expense	\$ 85	\$88	\$69	\$60	\$55	\$53

5. SERIES A PREFERRED STOCK

On December 4, 2015, NCR issued 820,000 shares of Series A Convertible Preferred Stock to certain entities affiliated with the Blackstone Group L.P. (collectively, Blackstone) for an aggregate purchase price of \$820 million, or \$1,000 per share, pursuant to an Investment Agreement between the Company and Blackstone, dated November 11, 2015. In connection with the issuance of the Series A Convertible Preferred Stock, the Company incurred direct and incremental expenses of \$26 million, including financial advisory fees, closing costs, legal expenses and other offering-related expenses. These direct and incremental expenses originally reduced the Series A Convertible Preferred Stock, and will be accreted through retained earnings as a deemed dividend from the date of issuance through the first possible known redemption date, March 16, 2024. During the twelve months ended December 31, 2018, 2017 and 2016, the Company paid dividends-in-kind of \$46 million, \$45 million, and \$47 million, respectively, associated with the Series A Convertible Preferred Stock. As of December 31, 2018 and 2017, the Company had accrued dividends of \$3 million, respectively, associated with the Series A Convertible Preferred Stock. There were no cash dividends declared during the twelve months ended December 31, 2018 or 2017.

Under the Investment Agreement, Blackstone agreed not to sell or otherwise transfer its shares of Series A Convertible Preferred Stock (or any shares of common stock issued upon conversion thereof) without the Company's consent until June 4, 2017. In March 2017, we provided Blackstone with an early release from this lock-up, allowing Blackstone to sell approximately 49% of its shares of Series A Convertible Preferred Stock, and in return, Blackstone agreed to amend the Investment Agreement to extend the lock-up on the remaining 51% of its shares of Series A Convertible Preferred Stock for six months until December 1, 2017.

In connection with the early release of the lock-up, Blackstone offered for sale 342,000 shares of Series A Convertible Preferred Stock in an underwritten public offering. In addition, Blackstone converted 90,000 shares of Series A Convertible Preferred Stock into shares of our common stock and we repurchased those shares of common stock for \$48.47 per share. The underwritten offering and the stock repurchase were consummated on March 17, 2017.

The repurchase of the common shares immediately upon conversion is considered a redemption of the related preferred shares. As a result, the excess of the fair value of consideration transferred over the carrying value, of \$58 million, was included as a deemed dividend in adjusting the income from common stockholders in calculating earnings per share for the year ended December 31, 2017. Additionally, we determined that the changes to the lock-up period were considered a modification of the Series A Convertible Preferred Stock. The impact of the modification, calculated as the difference in the fair value immediately before and immediately after the changes, of \$4 million, was included as a deemed dividend in adjusting the income from common stockholders in calculating earnings per share for the year ended December 31, 2017. This adjustment was recorded as an increase to the Series A Convertible Preferred Shares and will reduce the accretion of the direct and incremental expenses associated with the original offering as described above. Refer to Note 1, "Basis of Presentation and Significant Accounting Policies" for additional discussion.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Dividend Rights The Series A Convertible Preferred Stock ranks senior to the shares of the Company's common stock, with respect to dividend rights and rights on the distribution of assets on any voluntary or involuntary liquidation, dissolution or winding up of the affairs of the Company. The Series A Convertible Preferred Stock has a liquidation preference of \$1,000 per share. Holders of Series A Convertible Preferred Stock are entitled to a cumulative dividend at the rate of 5.5% per annum, payable quarterly in arrears and payable in-kind for the first sixteen dividend payments, after which, beginning in the first quarter of 2020, dividends will be payable in cash or in-kind at the option of the Company. If the Company does not declare and pay a dividend, the dividend rate will increase to 8.0% per annum until all accrued but unpaid dividends have been paid in full. Dividends are paid in-kind, through the issuance of additional shares of Series A Convertible Preferred Stock, for the first sixteen dividend payment dates, after which dividends will be payable in cash or in-kind at the option of the Company.

Conversion Features The Series A Convertible Preferred Stock is convertible at the option of the holders at any time into shares of common stock at a conversion price of \$30.00 per share and a conversion rate of 33.333 shares of common stock per share of Series A Convertible Preferred Stock. As of December 31, 2018 and 2017, the maximum number of common shares that could be required to be issued upon conversion of the outstanding shares of Series A Convertible Preferred Stock was 29.0 million and 27.5 million shares, respectively. The conversion rate is subject to the following customary anti-dilution and other adjustments:

- the issuance of common stock as a dividend or the subdivision, combination, or reclassification of common stock into a greater or lesser number of shares of common stock;
- the dividend, distribution or other issuance of rights, options or warrants to holders of Common Stock entitling them to subscribe for or purchase shares of common stock at a price per share that is less than the volume-weighted average price per share of common stock;
- the completion of a tender offer or exchange offer of shares of common stock at a premium to the volume-weighted average price per share of common stock and certain other above-market purchases of common stock;
- the issuance of a dividend or similar distribution in-kind, which can include shares of any class of capital stock, evidences of the Company's indebtedness, assets or other property or securities, to holders of common stock;
- a transaction in which a subsidiary of the Company ceases to be a subsidiary of the Company as a result of the distribution of the equity interests of the subsidiary to the holders of the Company's common stock; and
- the payment of a cash dividend to the holders of common stock.

At any time after December 4, 2018, all outstanding shares of Series A Convertible Preferred Stock are convertible at the option of the Company if the volume-weighted average price of the common stock exceeds \$54.00 for at least 30 trading days in any period of 45 consecutive trading days. The \$54.00 may be adjusted pursuant to the anti-dilution provisions above.

The Series A Convertible Preferred Stock, and the associated dividends for the first sixteen payments, did not generate a beneficial conversion feature (BCF) upon issuance as the fair value of the Company's common stock was greater than the conversion price. The Company will determine and, if required, measure a BCF based on the fair value of our stock price on the date dividends are declared subsequent to the sixteenth dividend. If a BCF is recognized, a reduction to retained earnings and the Series A Convertible Preferred Stock will be recorded, and then subsequently accreted through the first redemption date.

Additionally, the Company determined that the nature of the Series A Convertible Preferred Stock was more akin to an equity instrument and that the economic characteristics and risks of the embedded conversion options were clearly and closely related to the Series A Convertible Preferred Stock. As such, the conversion options were not required to be bifurcated from the host under ASC 815, Derivatives and Hedging.

Redemption Rights On any date during the three months commencing on and immediately following March 16, 2024 and the three months commencing on and immediately following every third anniversary of March 16, 2024, holders of Series A Convertible Preferred Stock have the right to require the Company to repurchase all or any portion of the Series A Convertible Preferred Stock at 100% of the liquidation preference thereof plus all accrued but unpaid dividends. Upon certain change of control events involving the Company, holders of Series A Convertible Preferred Stock can require the Company to repurchase, subject to certain exceptions, all or any portion of the Series A Convertible Preferred Stock at the greater of (1) an amount in cash equal to 100% of the liquidation preference thereof plus all accrued but unpaid dividends and (2) the consideration the holders would have received if they had converted their shares of Series A Convertible Preferred Stock into common stock immediately prior to the change of control event.

The Company has the right, upon certain change of control events involving the Company, to redeem the Series A Convertible Preferred Stock at the greater of (1) an amount in cash equal to the sum of the liquidation preference of the Series A Convertible Preferred Stock, all accrued but unpaid dividends and the present value, discounted at a rate of 10%, of any remaining scheduled dividends through the fifth anniversary of the first dividend payment date, assuming the Company chose to pay such dividends in

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

cash (the "make-whole provision") and (2) the consideration the holders would have received if they had converted their shares of Series A Convertible Preferred Stock into common stock immediately prior to the change of control event.

Since the redemption of the Series A Convertible Preferred Stock is contingently or optionally redeemable and therefore not certain to occur, the Series A Convertible Preferred Stock is not required to be classified as a liability under ASC 480, Distinguishing Liabilities from Equity. As the Series A Convertible Preferred Stock is redeemable in certain circumstances at the option of the holder and is redeemable in certain circumstances upon the occurrence of an event that is not solely within our control, we have classified the Series A Convertible Preferred Stock in mezzanine equity on the Consolidated Balance Sheets.

As noted above, the Company determined that the nature of the Series A Convertible Preferred Stock was more akin to an equity instrument. However, the Company determined that the economic characteristics and risks of the embedded put options, call option and make-whole provision were not clearly and closely related to the Series A Convertible Preferred Stock. Therefore, the Company assessed the put and call options further, and determined they did not meet the definition of a derivative under ASC 815, Derivatives and Hedging. Under the same analysis, the Company determined the make-whole provision did meet the definition of a derivative, but that the value of the derivative was minimal due to the expectations surrounding the scenarios under which the call option and make-whole provision would be exercised.

Voting Rights Holders of Series A Convertible Preferred Stock are entitled to vote with the holders of the common stock on an as-converted basis. Holders of Series A Convertible Preferred Stock are entitled to a separate class vote with respect to certain designees for election to the Company's Board of Directors, amendments to the Company's organizational documents that have an adverse effect on the Series A Convertible Preferred Stock and issuances by the Company of securities that are senior to, or equal in priority with, the Series A Convertible Preferred Stock.

Registration Rights Holders of Series A Convertible Preferred Stock have certain customary registration rights with respect to the Series A Convertible Preferred Stock and the shares of common stock into which they are converted, pursuant to the terms of a registration rights agreement.

6. DEBT OBLIGATIONS

The following table summarizes the Company's short-term borrowings and long-term debt:

In millions, except percentages	December 31, 2018		December 31, 2017	
	Amount	Weighted-Average Interest Rate	Amount	Weighted-Average Interest Rate
Short-Term Borrowings				
Current portion of Senior Secured Credit Facility ⁽¹⁾	\$84	4.51%	\$51	3.21%
Trade Receivables Securitization Facility	100	3.37%	—	
Other ⁽²⁾	1	4.92%	1	3.71%
Total short-term borrowings	\$185		\$52	
Long-Term Debt				
Senior Secured Credit Facility:				
Term loan facility ⁽¹⁾	\$675	4.51%	\$759	3.21%

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Revolving credit facility ⁽¹⁾	120	4.49%	—
Senior Notes:			
5.00% Senior Notes due 2022	600		600
4.625% Senior Notes due 2021	500		500
5.875% Senior Notes due 2021	400		400
6.375% Senior Notes due 2023	700		700
Deferred financing fees	(18)		(23)
Other ⁽²⁾	3	0.59%	3 1.62%
Total long-term debt	\$2,980		\$2,939

⁽¹⁾ Interest rates are weighted average interest rates as of December 31, 2018 and 2017.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

- (2) Interest rates are weighted average interest rates as of December 31, 2018 and 2017 primarily related to various international credit facilities and a note payable in the U.S.

Senior Secured Credit Facility On March 31, 2016, the Company amended and restated its senior secured credit facility with and among certain foreign subsidiaries of NCR (the Foreign Borrowers), the lenders party thereto and JPMorgan Chase Bank, NA (JPMCB) as the administrative agent, and refinanced its term loan facility and revolving credit facility thereunder (the Senior Secured Credit Facility). As of December 31, 2018, the Senior Secured Credit Facility consisted of a term loan facility with an aggregate principal amount outstanding of \$759 million and a revolving credit facility with an aggregate principal amount of \$1.1 billion, of which \$120 million was outstanding. The revolving credit facility also allows a portion of the availability to be used for outstanding letters of credit, and as of December 31, 2018, there were no letters of credit outstanding.

Up to \$400 million of the revolving credit facility is available to the Foreign Borrowers. Term loans were made to the Company in U.S. Dollars, and loans under the revolving credit facility are available in U.S. Dollars, Euros and Pound Sterling.

The outstanding principal balance of the term loan facility is required to be repaid in equal quarterly installments of approximately \$11 million beginning June 30, 2016, \$17 million beginning June 30, 2018, and \$23 million beginning June 30, 2019, with the balance being due at maturity on March 31, 2021. Borrowings under the revolving portion of the credit facility are due March 31, 2021. Amounts outstanding under the Senior Secured Credit Facility bear interest at LIBOR (or, in the case of amounts denominated in Euros, EURIBOR), or, at NCR's option, in the case of amounts denominated in U.S. Dollars, at a base rate equal to the highest of (a) the federal funds rate plus 0.50%, (b) JPMCB's "prime rate" and (c) the one-month LIBOR rate plus 1.00% (the Base Rate), plus, in each case, a margin ranging from 1.25% to 2.25% for LIBOR-based loans that are either term loans or revolving loans and EURIBOR-based revolving loans and ranging from 0.25% to 1.25% for Base Rate-based loans that are either term loans or revolving loans, in each case, depending on the Company's consolidated leverage ratio. The terms of the Senior Secured Credit Facility also require certain other fees and payments to be made by the Company, including a commitment fee on the undrawn portion of the revolving credit facility.

The obligations of the Company and Foreign Borrowers under the Senior Secured Credit Facility are guaranteed by certain of the Company's wholly-owned domestic subsidiaries. The Senior Secured Credit Facility and these guarantees are secured by a first priority lien and security interest in certain equity interests owned by the Company and the guarantor subsidiaries in certain of their respective domestic and foreign subsidiaries, and a perfected first priority lien and security interest in substantially all of the Company's U.S. assets and the assets of the guarantor subsidiaries, subject to certain exclusions. These security interests would be released if the Company achieves an "investment grade" rating, and will remain released so long as the Company maintains that rating.

The Senior Secured Credit Facility includes affirmative and negative covenants that restrict or limit the ability of the Company and its subsidiaries to, among other things, incur indebtedness; create liens on assets; engage in certain fundamental corporate changes or changes to the Company's business activities; make investments; sell or otherwise dispose of assets; engage in sale-leaseback or hedging transactions; repurchase stock, pay dividends or make similar distributions; repay other indebtedness; engage in certain affiliate transactions; or enter into agreements that restrict the Company's ability to create liens, pay dividends or make loan repayments. The Senior Secured Credit Facility also includes financial covenants that require the Company to maintain:

- consolidated leverage ratio on the last day of any fiscal quarter, not to exceed (i) in the case of any fiscal quarter ending after December 31, 2017 and on or prior to December 31, 2019, (a) the sum of 4.00 and an amount (not to

exceed 0.50) to reflect debt used to reduce NCR's unfunded pension liabilities to (b) 1.00, and (ii) in the case of any fiscal quarter ending after December 31, 2019, the sum of (a) 3.75 and an amount (not to exceed 0.50) to reflect debt used to reduce NCR's unfunded pension liabilities to (b) 1.00; and

an interest coverage ratio on the last day of any fiscal quarter greater than or equal to 3.50 to 1.00.

At December 31, 2018, the maximum consolidated leverage ratio under the Senior Secured Credit Facility was 4.10 to 1.00.

The Senior Secured Credit Facility also includes provisions for events of default, which are customary for similar financings. Upon the occurrence of an event of default, the lenders may, among other things, terminate the loan commitments, accelerate all loans and require cash collateral deposits in respect of outstanding letters of credit. If the Company is unable to pay or repay the amounts due, the lenders could, among other things, proceed against the collateral granted to them to secure such indebtedness.

The Company may request, at any time and from time to time, but the lenders are not obligated to fund, the establishment of one or more incremental term loans and/or revolving credit facilities (subject to the agreement of existing lenders or additional financial

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

institutions to provide such term loans and/or revolving credit facilities) with commitments in an aggregate amount not to exceed the greater of (i) \$150 million, and (ii) such amount as would not (a) prior to the date that the Company obtains an investment grade rating cause the leverage ratio under the Senior Secured Credit Facility, calculated on a pro forma basis including the incremental facility and assuming that it and the revolver are fully drawn, to exceed 2.50 to 1.00, and (b) on and after the date that the Company obtains an "investment grade" rating cause the leverage ratio under the Senior Secured Credit Facility, calculated on a pro forma basis including the incremental facility and assuming that it and the revolver are fully drawn, to exceed a ratio that is 0.50 less than the leverage ratio then applicable under the financial covenants of the Senior Secured Credit Facility, the proceeds of which can be used for working capital requirements and other general corporate purposes.

Senior Unsecured Notes On September 17, 2012, the Company issued \$600 million aggregate principal amount of 5.00% senior unsecured notes due in 2022 (the 5.00% Notes). The 5.00% Notes were sold at 100% of the principal amount and will mature on July 15, 2022. On December 18, 2012, the Company issued \$500 million aggregate principal amount of 4.625% senior unsecured notes due in 2021 (the 4.625% Notes). The 4.625% Notes were sold at 100% of the principal amount and will mature on February 15, 2021. On December 19, 2013, the Company issued \$400 million aggregate principal amount of 5.875% senior unsecured notes due in 2021 (the 5.875% Notes) and \$700 million aggregate principal amount of 6.375% senior unsecured notes due in 2023 (the 6.375% Notes). The 5.875% Notes were sold at 100% of the principal amount and will mature on December 15, 2021 and the 6.375% Notes were sold at 100% of the principal amount and will mature on December 15, 2023. The senior unsecured notes are guaranteed, fully and unconditionally, on an unsecured senior basis, by our 100% owned subsidiary, NCR International, Inc. Under the indentures for these notes, the Company has the option to redeem each series of notes, in whole or in part, at various times for specified prices, plus accrued and unpaid interest. Under the indentures for these notes, the Company has the option to redeem each series of notes, in whole or in part, at various times for specified prices, plus accrued and unpaid interest.

The Company has the option to redeem the 5.00% Notes, in whole or in part, at any time on or after July 15, 2017, at a redemption price of 102.500%, 101.667%, 100.833% and 100.000% during the 12-month periods commencing on July 15, 2017, 2018, 2019 and 2020 and thereafter, respectively, plus accrued and unpaid interest to the redemption date.

The Company has the option to redeem the 4.625% Notes, in whole or in part, at any time on or after February 15, 2017, at a redemption price of 102.313%, 101.156% and 100% during the 12-month periods commencing on February 15, 2017, 2018 and 2019 and thereafter, respectively, plus accrued and unpaid interest to the redemption date.

The Company has the option to redeem the 5.875% Notes, in whole or in part, at any time on or after December 15, 2017, at a redemption price of 102.938%, 101.469% and 100% during the 12-month periods commencing on December 15, 2017, 2018 and 2019 and thereafter, respectively, plus accrued and unpaid interest to the redemption date.

The Company has the option to redeem the 6.375% Notes, in whole or in part, at any time on or after December 15, 2018, at a redemption price of 103.188%, 102.125%, 101.063% and 100% during the 12-month periods commencing on December 15, 2018, 2019, 2020 and 2021 and thereafter, respectively, plus accrued and unpaid interest to the redemption date. Prior to December 15, 2018, the Company may redeem the 6.375% Notes, in whole or in part, at a redemption price equal to 100% of the principal amount plus a make-whole premium and accrued and unpaid interest to the redemption date.

The terms of the indentures for these notes limit the ability of the Company and certain of its subsidiaries to, among other things, incur additional debt or issue redeemable preferred stock; pay dividends or make certain other restricted payments or investments; incur liens; sell assets; incur restrictions on the ability of the Company's subsidiaries to pay dividends to the Company; enter into affiliate transactions; engage in sale and leaseback transactions; and consolidate, merge, sell or otherwise dispose of all or substantially all of the Company's or such subsidiaries' assets. These covenants are subject to significant exceptions and qualifications. For example, if these notes are assigned an "investment grade" rating by Moody's or S&P and no default has occurred or is continuing, certain covenants will be terminated.

Trade Receivables Securitization Facility In November 2014, the Company established a revolving trade receivables securitization facility (the A/R Facility) with PNC Bank, National Association (PNC) as the administrative agent, and various lenders. In November 2016, the Company amended the A/R Facility to extend the maturity date to November 2018. In November 2018, the Company amended the A/R Facility to extend the maturity date to November 2020. The amendment also included other modifications including the scope of receivables subject to the facility and related eligibility requirements, procedures for selecting and adopting a replacement benchmark rate in the event of certain discontinuations of LIBOR, and the fees and interest payable to the lenders party thereto. The A/R Facility provides for up to \$200 million in funding based on the availability of eligible receivables and other customary factors and conditions, of which \$100 million was outstanding as of December 31, 2018.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Under the A/R Facility, NCR sells and/or contributes certain of its U.S. trade receivables to a wholly-owned, bankruptcy-remote subsidiary as they are originated, and advances by the lenders to that subsidiary are secured by those trade receivables. The assets of this financing subsidiary are restricted as collateral for the payment of its obligations under the A/R Facility, and its assets and credit are not available to satisfy the debts and obligations owed to the creditors of the Company. The Company includes the assets, liabilities and results of operations of this financing subsidiary in its consolidated financial statements. The financing subsidiary owned \$526 million and \$491 million of outstanding accounts receivable as of December 31, 2018 and 2017, respectively, and these amounts are included in accounts receivable, net in the Company's Consolidated Balance Sheets.

The financing subsidiary will pay annual commitment and other customary fees to the lenders, and advances by a lender under the A/R Facility will accrue interest (i) at a reserve-adjusted LIBOR rate or a base rate equal to the highest of (a) the applicable lender's prime rate or (b) the federal funds rate plus 0.50%, if the lender is funding as a committed lender under the terms of the A/R Facility, or (ii) based on commercial paper interest rates if the lender is funding as a commercial paper conduit lender. Advances may be prepaid at any time without premium or penalty.

The A/R Facility contains various customary affirmative and negative covenants and default and termination provisions which provide for the acceleration of the advances under the A/R Facility in circumstances including, but not limited to, failure to pay interest or principal when due, breach of representation, warranty or covenant, certain insolvency events or failure to maintain the security interest in the trade receivables, and defaults under other material indebtedness.

Debt Maturities Maturities of debt outstanding, in principal amounts, at December 31, 2018 are summarized below:

For the years ended December
31

In millions	Total	2019	2020	2021	2022	2023	Thereafter
Debt maturities	\$3,183	\$85	\$190	\$1,605	\$600	\$700	\$ 3

Fair Value of Debt The Company utilized Level 2 inputs, as defined in the fair value hierarchy, to measure the fair value of the long-term debt, which, as of December 31, 2018 and 2017 was \$3.11 billion and \$3.07 billion, respectively. Management's fair value estimates were based on quoted prices for recent trades of NCR's long-term debt, quoted prices for similar instruments, and inquiries with certain investment communities.

7. INCOME TAXES

On December 22, 2017, the U.S. enacted comprehensive and complex tax legislation commonly referred to as the Tax Cuts and Jobs Act of 2017 ("U.S. Tax Reform"). The legislation resulted in a permanent reduction in the corporate tax rate to 21% and a one-time mandatory tax on certain undistributed earnings of foreign subsidiaries ("repatriation tax").

U.S. Tax Reform also put in place several new tax laws that are generally effective prospectively from January 1, 2018, including but not limited to: a base erosion and anti-abuse tax; elimination of U.S. federal taxes on substantially all dividends from foreign subsidiaries; a lower U.S. tax rate on certain revenues from sources outside the U.S.; and, implementation of a new provision to tax certain global intangible low-taxed income ("GILTI") of foreign subsidiaries.

U.S. GAAP generally requires that the overall impact of tax legislation is recorded in the quarter of enactment. However, given the fundamental complexity of U.S. Tax Reform, the SEC staff issued Staff Accounting Bulletin No.

118 (SAB 118) that allowed the Company to record provisional amounts for the impacts of the legislation at the time the law was enacted, with the requirement that the accounting be completed in a period not to exceed one year from the date of enactment of the legislation with updates of the provisional amount into future periods. As of December 31, 2017, the Company had not completed the accounting in its entirety for the tax effects of the legislation. The Company made a reasonable estimate of the impact of U.S. Tax Reform and recorded a provisional tax expense of \$130 million in the year ended December 31, 2017. This provisional tax expense included a \$94 million tax expense to remeasure the net U.S. deferred tax assets to the newly enacted 21% corporate income tax rate and a \$36 million tax expense related to the repatriation tax.

As of December 31, 2018, we have completed our assessment of the impact of U.S Tax Reform which resulted in an additional net income tax expense of \$37 million recorded during the year ended December 31, 2018. The expense primarily consists of \$43 million benefit related to deferred tax asset rate remeasurement and an \$80 million tax expense related to the write off of expected foreign tax credit offsets to unrecognized tax benefits and the establishment of a valuation allowance on deferred tax assets related to foreign tax credits that are not more likely than not to be realized as a result of the U.S. Tax Reform. Additionally, we have elected to treat any taxes due on the GILTI inclusion as a current period expense.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

NCR did not provide for additional U.S. income tax or foreign withholding taxes, if any, on approximately \$2.7 billion of undistributed earnings of its foreign subsidiaries, given the intention continues to be that those earnings are reinvested indefinitely. The amount of unrecognized deferred tax liability associated with these indefinitely reinvested earnings is approximately \$176 million. The unrecognized deferred tax liability is made up of a combination of U.S. and state income taxes and foreign withholding taxes.

During the year ended December 31, 2018, the Company identified two out of period adjustments that net to \$2 million of income tax benefit. The first adjustment was due to an error in the calculation of deferred tax liabilities associated with software capitalization resulting in \$13 million of income tax benefit which should have been recorded during the year ended December 31, 2017 when deferred taxes were remeasured in connection with U.S. Tax Reform. The second adjustment was to write-off income tax assets related to expired foreign tax credits resulting in \$11 million of income tax expense which should have been recorded between 2010 through 2017. The Company determined the impact of these errors was not material to the annual or interim financial statements of previous periods and the effect of correcting these errors was not material to 2018 annual financial statements.

For the years ended December 31, income (loss) from continuing operations before income taxes consisted of the following:

In millions	2018	2017	2016
Income (loss) before income taxes			
United States	\$(262)	\$149	\$35
Foreign	301	333	344
Total income (loss) from continuing operations before income taxes	\$39	\$482	\$379

For the years ended December 31, income tax expense (benefit) consisted of the following:

In millions	2018	2017	2016
Income tax expense (benefit)			
Current			
Federal	\$18	\$14	\$18
State	—	2	4
Foreign	42	54	60
Deferred			
Federal	(2)	178	12
State	1	(3)	1
Foreign	14	(3)	(3)
Total income tax expense (benefit)	\$73	\$242	\$92

The following table presents the principal components of the difference between the effective tax rate and the U.S. federal statutory income tax rate for the years ended December 31:

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions	2018	2017	2016
Income tax (benefit) expense at the U.S. federal tax rate of 21% for 2018 and 35% for 2017 and 2016, respectively	\$8	\$169	\$133
Foreign income tax differential	22	(38)	(26)
State and local income taxes (net of federal effect)	2	(1)	3
Other U.S. permanent book/tax differences	—	1	1
Meals and entertainment expense	2	2	1
Cash surrender value received as income	—	—	(1)
Executive compensation	4	1	1
Employee share-based payments	3	(3)	3
Change in branch tax status	(9)	—	—
Goodwill impairment	30	—	—
Research and development tax credits	(6)	(4)	(4)
U.S. manufacturing deduction	—	(9)	(7)
U.S. valuation allowance ⁽¹⁾	16	—	—
U.S. tax reform	37	130	—
Change in liability for unrecognized tax benefits ⁽¹⁾	(23)	(2)	(12)
Prior period adjustments	(11)	—	—
Other, net	(2)	(4)	—
Total income tax expense (benefit)	\$73	\$242	\$92

⁽¹⁾ Does not include the impact of items included in the U.S. Tax Reform category

NCR's tax provisions include a provision for income taxes in certain tax jurisdictions where its subsidiaries are profitable, but reflect only a portion of the tax benefits related to certain foreign subsidiaries' tax losses due to the uncertainty of the ultimate realization of future benefits from these losses. During 2018, the tax rate was impacted by \$37 million of tax expense relating to U.S. Tax Reform. During 2017, the tax rate was impacted by a provisional charge of \$130 million relating to U.S. Tax Reform. During 2016, the tax rate was impacted by a less favorable mix of earnings, primarily driven by actuarial pension losses in foreign jurisdictions with valuation allowance against deferred tax assets.

We regularly review our deferred tax assets for recoverability and establish a valuation allowance if it is more likely than not that some portion or all of the deferred tax asset will not be realized. The determination as to whether a deferred tax asset will be realized is made on a jurisdictional basis and is based on the evaluation of positive and negative evidence. This evidence includes historical taxable income/loss, projected future taxable income, the expected timing of the reversal of existing temporary differences and the implementation of tax planning strategies. Given current earnings and anticipated future earnings at certain subsidiaries, the Company believes that there is a reasonable possibility sufficient positive evidence may become available that would allow the release of a valuation allowance within the next twelve months.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Deferred income tax assets and liabilities included in the Consolidated Balance Sheets as of December 31 were as follows:

In millions	2018	2017
Deferred income tax assets		
Employee pensions and other benefits	\$223	\$230
Other balance sheet reserves and allowances	141	185
Tax loss and credit carryforwards	682	525
Capitalized research and development	53	50
Property, plant and equipment	11	6
Other	38	27
Total deferred income tax assets	1,148	1,023
Valuation allowance	(485)	(415)
Net deferred income tax assets	663	608
Deferred income tax liabilities		
Intangibles	151	129
Capitalized software	78	27
Other	7	16
Total deferred income tax liabilities	236	172
Total net deferred income tax assets	\$427	\$436

NCR recorded valuation allowances related to certain deferred income tax assets due to the uncertainty of the ultimate realization of the future benefits from those assets. The valuation allowances cover deferred tax assets, primarily tax loss carryforwards and foreign tax credits, in tax jurisdictions where there is uncertainty as to the ultimate realization of those tax losses and credits. If we are unable to generate sufficient future taxable income of the proper source in the time period within which the temporary differences underlying our deferred tax assets become deductible, or before the expiration of our loss and credit carryforwards, additional valuation allowances could be required.

As of December 31, 2018, NCR had U.S. federal, U.S. state (tax effected), and foreign tax attribute carryforwards of approximately \$1.6 billion. The net operating loss carryforwards that are subject to expiration will expire in the years 2019 through 2037. This includes U.S. tax credit carryforwards of \$301 million. Approximately \$10 million of the credit carryforwards will be refunded by 2022 due to U.S. Tax Reform, and \$291 million of the credit carryforwards expire in the years 2019 through 2038. As a result of stock ownership changes our U.S. tax attributes could be subject to limitations under Section 382 of the U.S. Internal Revenue Code of 1986, as amended, if further material stock ownership changes occur.

The aggregate changes in the balance of our gross unrecognized tax benefits were as follows for the years ended December 31:

In millions	2018	2017	2016
Gross unrecognized tax benefits - January 1	\$196	\$183	\$209
Increases related to tax positions from prior years	9	3	3
Decreases related to tax positions from prior years	(50)	(1)	(34)
Increases related to tax provisions taken during the current year	9	23	23
Settlements with tax authorities	(45)	(4)	(6)
Lapses of statutes of limitation	(9)	(8)	(12)
Total gross unrecognized tax benefits - December 31	\$110	\$196	\$183

Of the total amount of gross unrecognized tax benefits as of December 31, 2018, \$84 million would affect NCR's effective tax rate if realized. The Company's liability arising from uncertain tax positions is recorded in income tax accruals and other current liabilities in the Consolidated Balance Sheets.

We recognized interest and penalties associated with uncertain tax positions as part of the provision for income taxes in our Consolidated Statements of Operations of \$9 million of benefit, \$2 million of expense, and zero for the years ended December

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

31, 2018, 2017, and 2016, respectively. The gross amount of interest and penalties accrued as of December 31, 2018 and 2017 was \$33 million and \$45 million, respectively.

In the U.S., NCR files consolidated federal and state income tax returns where statutes of limitations generally range from three to five years. The Company resolved examinations for the tax years of 2011, 2012 and 2013 with the IRS in 2018, and U.S. federal tax years remain open from 2014 forward. Years beginning on or after 2001 are still open to examination by certain foreign taxing authorities, including India, Egypt, and other major taxing jurisdictions.

During 2019, the Company expects to resolve certain tax matters related to U.S. and foreign jurisdictions. As of December 31, 2018, we estimate that it is reasonably possible that unrecognized tax benefits may decrease by \$5 million to \$10 million in the next 12 months due to the resolution of these tax matters.

8. STOCK COMPENSATION PLANS

The Company recognizes all share-based payments as compensation expense in its financial statements based on their fair value.

As of December 31, 2018, the Company's stock-based compensation consisted of restricted stock units, employee stock purchase plan and stock options. The Company recorded stock-based compensation expense for the years ended December 31 as follows:

In millions	2018	2017	2016
Restricted stock units	\$ 65	\$ 73	\$ 61
Employee stock purchase plan	4	4	—
Stock options	4	—	—
Stock-based compensation expense	73	77	61
Tax benefit	(10)	(22)	(18)
Total stock-based compensation (net of tax)	\$ 63	\$ 55	\$ 43

Approximately 22 million shares remain authorized to be issued under the 2013 Stock Incentive Plan (SIP). Details of the Company's stock-based compensation plans are discussed below.

Restricted Stock Units

The SIP provides for the grant of several different forms of stock-based compensation, including restricted stock units. Restricted stock units can have service-based and/or performance-based vesting with performance goals being established by the Compensation and Human Resource Committee of the Company's Board of Directors. Any grant of restricted stock units is generally subject to a vesting period of 12 months to 48 months, to the extent permitted by the SIP. Performance-based grants conditionally vest upon achievement of future performance goals based on performance criteria such as the Company's achievement of specific return on capital and/or other financial metrics (as defined in the SIP) during the performance period. Performance-based grants must be earned, based on performance, before the actual number of shares to be awarded is known. The Compensation and Human Resource Committee considers the likelihood of meeting the performance criteria based upon estimates and other relevant data, and certifies performance based on its analysis of achievement against the performance criteria. A recipient of restricted stock units does not have the rights of a stockholder and is subject to restrictions on transferability and risk of forfeiture. Other terms and conditions applicable to any award of restricted stock units will be determined by the Compensation and

Human Resource Committee and set forth in the agreement relating to that award.

The following table reports restricted stock unit activity during the year ended December 31, 2018:

Shares in thousands	Number of Units	Weighted
		Average Grant-Date Fair Value per Unit
Unvested shares as of January 1	7,158	\$ 29.78
Shares granted	3,440	\$ 26.25
Shares vested	(2,980)	\$ 27.45
Shares forfeited	(1,652)	\$ 30.58
Unvested shares as of December 31	5,966	\$ 28.69

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Stock-based compensation expense is recognized in the financial statements based upon fair value. The total fair value of units vested and distributed in the form of NCR common stock was \$90 million in 2018, \$87 million in 2017, and \$42 million in 2016. As of December 31, 2018, there was \$79 million of unrecognized compensation cost related to unvested restricted stock unit grants. The unrecognized compensation cost is expected to be recognized over a remaining weighted-average period of 1.1 years. The weighted average grant date fair value for restricted stock unit awards granted in 2017 and 2016 was \$46.95 and \$20.45, respectively.

The following table represents the composition of restricted stock unit grants in 2018:

Shares in thousands	Number of Units	Weighted Average
		Grant-Date Fair Value
Service-based units	2,168	\$ 31.12
Performance-based units	1,272	\$ 17.97
Total restricted stock units	3,440	\$ 26.25

At December 31, 2018, certain of the performance-based shares granted in 2018 were not probable of vesting.

Stock Options

The SIP also provides for the grant of stock options to purchase shares of NCR common stock. The Compensation and Human Resource Committee has discretion to determine the material terms and conditions of option awards under the SIP, provided that (i) the exercise price must be no less than the fair market value of NCR common stock (defined as the closing price) on the date of grant, (ii) the term must be no longer than ten years, and (iii) in no event shall the normal vesting schedule provide for vesting in less than one year. Other terms and conditions of an award of stock options will be determined by the Compensation and Human Resource Committee as set forth in the agreement relating to that award. The Compensation and Human Resource Committee has authority to administer the SIP, except that the Committee on Directors and Governance of the Company's Board of Directors will administer the SIP with respect to non-employee members of the Board of Directors. New shares of the Company's common stock are issued as a result of stock option exercises.

Stock compensation expense is recognized in the financial statements based upon grant date fair value and is computed using the Black-Scholes option-pricing model. During the year ended December 31, 2018, the Company granted stock options and the weighted average fair value of option grants was estimated based on the below weighted average assumptions, which was \$9.80. The stock options were granted with a seven year contractual term that will vest over four years. For the years ended December 31, 2017 and 2016, the Company did not grant a significant amount of stock options.

	For the year ended December 31, 2018	
Dividend yield	—	
Risk-free interest rate	2.50	%
Expected volatility	34.88	%

Expected holding period - years 3.8 years

Expected volatility is calculated as the historical volatility of the Company's stock over a period equal to the expected term of the options, as management believes this is the best representation of prospective trends. The Company uses historical data to estimate option exercise and employee terminations within the valuation model. The expected holding period represents the period of time that options are expected to be outstanding. The risk-free interest rate for periods within the contractual life of the option is based on a blend of the three and five-year U.S. Treasury yield curve in effect at the time of grant.

The following table summarizes the Company's stock option activity for the year ended December 31, 2018:

82

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Shares in thousands	Shares Under Option	Weighted Average Exercise Price per Share	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding as of January 1	475	\$ 16.70		
Granted	2,869	\$ 30.59		
Exercised	(277)	\$ 17.75		
Forfeited or expired	(461)	\$ 32.57		
Outstanding as of December 31	2,606	\$ 29.08	6.01	\$ 1.56
Fully vested and expected to vest as of December 31	2,402	\$ 30.21	6.39	\$ —
Exercisable as of December 31	204	\$ 15.77	1.57	\$ 1.56

As of December 31, 2018, the total unrecognized compensation cost of \$16 million related to unvested stock option grants is expected to be recognized over a weighted average period of approximately 1.7 years.

The total intrinsic value of all options exercised was \$4 million in 2018, \$3 million in 2017, and \$6 million in 2016. Cash received from option exercises under all share-based payment arrangements was \$4 million in 2018, \$2 million in 2017, and \$8 million in 2016. The tax benefit realized from these exercises was \$1 million in 2018, \$1 million in 2017, and \$2 million in 2016.

Employee Stock Purchase Plan

The Company's amended Employee Stock Purchase Plan ("ESPP") provides employees a 15% discount on stock purchases using a three-month look-back feature where the discount is applied to the stock price that represents the lower of NCR's closing stock price on either the first day or the last day of each calendar quarter. Participants can contribute between 1% and 10% of their compensation. The amended ESPP was approved by NCR stockholders in 2016 and became effective January 1, 2017.

Employees purchased approximately 0.7 million shares in 2018, 0.5 million shares in 2017, and 0.3 million shares in 2016, for approximately \$17 million in 2018, \$15 million in 2017 and \$7 million in 2016. A total of 4 million shares were originally authorized to be issued under the ESPP before its amendment. Under the amended ESPP, 10 million shares were newly authorized to be issued, plus any shares remaining unissued under the prior ESPP after the last 2016 purchase date. Approximately 9.7 million authorized shares remain unissued under our amended ESPP as of December 31, 2018.

9. EMPLOYEE BENEFIT PLANS

Pension, Postretirement and Postemployment Plans NCR sponsors defined benefit pension plans. NCR's U.S. pension plan no longer offers additional benefits and is closed to new participants. Internationally, the defined benefit plans are based primarily upon compensation and years of service. Certain international plans also no longer offer additional benefits and are closed to new participants. NCR's funding policy is to contribute annually no less than the minimum required by applicable laws and regulations. Assets of NCR's defined benefit plans are primarily invested in corporate and government debt securities, common and commingled trusts, publicly traded common stocks, real estate

investments, and cash or cash equivalents.

NCR recognizes the funded status of each applicable plan on the Consolidated Balance Sheets. Each overfunded plan is recognized as an asset and each underfunded plan is recognized as a liability. For pension plans, changes in the fair value of plan assets and net actuarial gains or losses are recognized upon remeasurement, which is at least annually in the fourth quarter of each year. For postretirement and postemployment plans, changes to the funded status are recognized as a component of other comprehensive loss in stockholders' equity.

NCR sponsors a U.S. postretirement benefit plan that no longer offers benefits to U.S. participants who had not reached a certain age and years of service with NCR. The plan provides medical care benefits to retirees and their eligible dependents. Non-U.S. employees are typically covered under government-sponsored programs, and NCR generally does not provide postretirement benefits other than pensions to non-U.S. retirees. NCR generally funds these benefits on a pay-as-you-go basis.

NCR offers various postemployment benefits to involuntarily terminated and certain inactive employees after employment but before retirement. These benefits are paid in accordance with NCR's established postemployment benefit practices and policies. Postemployment benefits include mainly severance as well as continuation of healthcare benefits and life insurance coverage

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

while on disability. NCR provides appropriate accruals for these postemployment benefits. These postemployment benefits are funded on a pay-as-you-go basis.

Pension Plans Reconciliation of the beginning and ending balances of the benefit obligations for NCR's pension plans are as follows:

In millions	U.S. Pension Benefits		International Pension Benefits		Total Pension Benefits	
	2018	2017	2018	2017	2018	2017
Change in benefit obligation						
Benefit obligation as of January 1	\$1,950	\$2,185	\$1,273	\$1,172	\$3,223	\$3,357
Net service cost	—	—	7	8	7	8
Interest cost	61	71	20	20	81	91
Amendment	—	—	4	—	4	—
Actuarial (gain) loss	(149)	121	(83)	43	(232)	164
Benefits paid	(99)	(427)	(86)	(75)	(185)	(502)
Plan participant contributions	—	—	1	1	1	1
Currency translation adjustments	—	—	(44)	104	(44)	104
Benefit obligation as of December 31	\$1,763	\$1,950	\$1,092	\$1,273	\$2,855	\$3,223
Accumulated benefit obligation as of December 31	\$1,763	\$1,950	\$1,080	\$1,262	\$2,843	\$3,212

A reconciliation of the beginning and ending balances of the fair value of the plan assets of NCR's pension plans are as follows:

In millions	U.S. Pension Benefits		International Pension Benefits		Total Pension Benefits	
	2018	2017	2018	2017	2018	2017
Change in plan assets						
Fair value of plan assets as of January 1	\$1,444	\$1,722	\$1,086	\$978	\$2,530	\$2,700
Actual return on plan assets	(76)	149	(34)	80	(110)	229
Company contributions	—	—	24	25	24	25
Benefits paid	(99)	(427)	(86)	(75)	(185)	(502)
Currency translation adjustments	—	—	(38)	77	(38)	77
Plan participant contributions	—	—	1	1	1	1
Fair value of plan assets as of December 31	\$1,269	\$1,444	\$953	\$1,086	\$2,222	\$2,530

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

The following table presents the funded status and the reconciliation of the funded status to amounts recognized in the Consolidated Balance Sheets and in accumulated other comprehensive loss as of December 31:

In millions	U.S. Pension Benefits		International Pension Benefits		Total Pension Benefits	
	2018	2017	2018	2017	2018	2017
Funded Status	\$(494)	\$(506)	\$(139)	\$(187)	\$(633)	\$(693)
Amounts recognized in the Consolidated Balance Sheets						
Noncurrent assets	\$—	\$—	\$140	\$118	\$140	\$118
Current liabilities	—	—	(14)	(13)	(14)	(13)
Noncurrent liabilities	(494)	(506)	(265)	(292)	(759)	(798)
Net amounts recognized	\$(494)	\$(506)	\$(139)	\$(187)	\$(633)	\$(693)
Amounts recognized in accumulated other comprehensive loss						
Prior service cost	—	—	21	18	21	18
Total	\$—	\$—	\$21	\$18	\$21	\$18

For pension plans with accumulated benefit obligations in excess of plan assets, the projected benefit obligation, accumulated benefit obligation and fair value of assets were \$2,016 million, \$2,012 million, and \$1,271 million, respectively, as of December 31, 2018, and \$2,229 million, \$2,223 million and \$1,446 million, respectively, as of December 31, 2017.

The net periodic benefit (income) cost of the pension plans for the years ended December 31 was as follows:

In millions	U.S. Pension Benefits			International Pension Benefits			Total Pension Benefits		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Net service cost	\$—	\$—	\$—	\$7	\$8	\$7	\$7	\$8	\$7
Interest cost	61	71	90	20	20	28	81	91	118
Expected return on plan assets	(43)	(57)	(72)	(32)	(35)	(36)	(75)	(92)	(108)
Amortization of prior service cost	—	—	—	1	1	1	1	1	1
Actuarial (gain) loss	(29)	28	16	(16)	—	69	(45)	28	85
Net periodic benefit (income) cost	\$(11)	\$42	\$34	\$(20)	\$(6)	\$69	\$(31)	\$36	\$103

Actuarial gains in 2018 were due to an increase in the discount rate as well as a favorable impact from a mortality update in the United Kingdom. Discount rates in 2017 remained consistent with 2016 and actuarial losses in 2017 were primarily due to a mortality update in the United States. Actuarial losses in 2016 were due to a decrease in the discount rate from the prior year, offset by a higher than expected return on global pension assets.

During 2017, the Company offered a voluntary lump sum payment option to certain former employees who were deferred vested participants of the Company's U.S. pension plan who had not yet started monthly payments of their pension benefit. The voluntary lump sum payment offer, which resulted in approximately \$130 million being paid out of plan assets, was completed during the fourth quarter of 2017. Additionally, during 2017, the Company entered into a single premium group annuity contract to secure approximately \$190 million of benefits for former employees or their related beneficiaries whose monthly pension benefit amount under the Company's U.S. pension plan was \$500 or less. These actions were completed during the fourth quarter of 2017 which resulted in an actuarial gain of \$25 million

and is reflected as a component of the actuarial loss as a result of the annual remeasurement completed in the fourth quarter of 2017.

Effective January 1, 2017, we changed the method used to estimate the service and interest components of net periodic benefit cost for our significant pension plans where yield curves are available. Previously, we estimated such cost components utilizing a single weighted-average discount rate derived from the yield curve used to measure the pension benefit obligation. The new methodology utilizes a full yield curve approach by applying the specific spot rates along the yield curve used in the determination of the pension benefit obligation to their underlying projected cash flows and provides a more precise measurement of service and

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

interest costs by improving the correlation between projected cash flows and their corresponding spot rates. This change does not affect the measurement of our total benefit obligation and was applied prospectively as a change in estimate, beginning January 1, 2017.

The weighted average rates and assumptions used to determine benefit obligations as of December 31 were as follows:

	U.S. Pension Benefits		International Pension Benefits		Total Pension Benefits	
	2018	2017	2018	2017	2018	2017
Discount rate	4.2 %	3.6 %	2.1 %	1.9 %	3.4 %	2.9 %
Rate of compensation increase	N/A	N/A	1.0 %	0.9 %	1.0 %	0.9 %

The weighted average rates and assumptions used to determine net periodic benefit (income) cost for the years ended December 31 were as follows:

	U.S. Pension Benefits			International Pension Benefits			Total Pension Benefits		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Discount rate - Service Cost	N/A	N/A	N/A	1.4 %	1.4 %	2.6 %	1.4 %	1.4 %	2.6 %
Discount rate - Interest Cost	3.2 %	3.4 %	4.3 %	1.6 %	1.6 %	2.6 %	2.6 %	2.8 %	3.7 %
Expected return on plan assets	3.1 %	3.5 %	4.3 %	3.0 %	3.5 %	3.8 %	3.1 %	3.5 %	4.1 %
Rate of compensation increase	N/A	N/A	N/A	0.9 %	0.9 %	1.3 %	0.9 %	0.9 %	1.3 %

The weighted-average cash balance interest crediting rate for the Company's cash balance defined benefit plans was 1.4% for the years ended December 31, 2018 and 2017, respectively.

The discount rate used to determine U.S. benefit obligations as of December 31, 2018 was derived by matching the plans' expected future cash flows to the corresponding yields from the Aon Hewitt AA Bond Universe Curve. This yield curve has been constructed to represent the available yields on high-quality, fixed-income investments across a broad range of future maturities. International discount rates were determined by examining interest rate levels and trends within each country, particularly yields on high-quality, long-term corporate bonds, relative to our future expected cash flows. During 2014, the Society of Actuaries published updated mortality tables and an improvement scale for U.S. plans, which both reflect improved longevity. Based on evaluation of these new tables, we updated our mortality assumptions for our U.S. pension benefits as of December 31, 2016. In 2017, we made a further update to utilize the white collar version of the 2014 tables due to a study of plan specific experience.

NCR employs a building block approach as its primary approach in determining the long-term expected rate of return assumptions for plan assets. Historical market returns are studied and long-term relationships between equities and fixed income are preserved consistent with the widely accepted capital market principle that assets with higher volatilities generate higher returns over the long run. Current market factors, such as inflation and interest rates are evaluated before long-term capital market assumptions are determined. The expected long-term portfolio return is established for each plan via a building block approach with proper rebalancing consideration. The result is then adjusted to reflect additional expected return from active management net of plan expenses. Historical plan returns, the expectations of other capital market participants, and peer data may be used to review and assess the results for reasonableness and appropriateness.

Plan Assets The weighted average asset allocations as of December 31, 2018 and 2017 by asset category are as follows:

86

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

	U.S. Pension Fund					International Pension Fund				
	Actual					Actual				
	Allocation of				Target Asset Allocation	Allocation of				Target Asset Allocation
	Plan Assets as of December 31					Plan Assets as of December 31				
	2018	2017				2018	2017			
Equity securities	—	%	—	%	0 - 0%	20	%	22	%	12 - 27%
Debt securities	98	%	98	%	95 - 100%	57	%	58	%	54 - 72%
Real estate	1	%	1	%	0 - 2%	14	%	12	%	6 - 14%
Other	1	%	1	%	0 - 3%	9	%	8	%	4 - 9%
Total	100	%	100	%		100	%	100	%	

The fair value of plan assets as of December 31, 2018 and 2017 by asset category is as follows:

In millions	Notes	U.S.					International				
		Fair Value as of December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling	Fair Value as of December 31, 2018	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling
Assets											
Equity securities:											
Common stock	1	\$—	\$—	\$—	\$—	\$—	\$44	\$44	\$—	\$—	\$—
Fixed income securities:											
Government securities	2	247	—	247	—	—	—	—	—	—	—
Corporate debt	3	761	—	761	—	—	100	—	100	—	—
Other types of investments:											
Money market funds	4	13	—	2	—	11	8	—	8	—	—
Common and commingled trusts - Equities	4	—	—	—	—	—	150	—	—	—	150
Common and commingled trusts - Bonds	4	174	—	—	—	174	405	—	—	—	405
Common and commingled trusts - Short Term Investments	4	27	—	—	—	27	40	—	—	—	40
Common and commingled trusts - Balanced	4	—	—	—	—	—	76	—	—	—	76
Partnership/joint venture interests - Real estate	5	4	—	—	—	4	—	—	—	—	—
	5	4	—	—	—	4	—	—	—	—	—

Partnership/joint venture interests -
Other

Mutual funds	4	39	39	—	—	—	—	—	—	—	—	
Hedge Funds	5	—	—	—	—	—	—	—	—	—	—	
Insurance products	4	—	—	—	—	—	1	—	1	—	—	
Real estate and other	5	—	—	—	—	—	129	—	—	129	—	
Total		\$ 1,269	\$ 39	\$ 1,010	\$	—	\$ 220	\$953	\$ 44	\$ 109	\$ 129	\$ 671

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions	Notes	U.S.					International				
		Fair Value as of December 31, 2017	Quoted Prices	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling	Fair Value as of December 31, 2017	Quoted Prices	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling
			in Active Markets for Identical Assets (Level 1)					in Active Markets for Identical Assets (Level 1)			
Assets											
Equity securities:											
Common stock	1	\$ 1	\$ —	\$ 1	\$ —	\$ —	\$ 56	\$ 56	\$ —	\$ —	\$ —
Fixed income securities:											
Government securities	2	223	—	223	—	—	49	—	49	—	—
Corporate debt	3	895	—	895	—	—	141	—	139	2	—
Other types of investments:											
Money market funds	4	24	—	—	—	24	15	—	10	—	5
Common and commingled trusts - Equities	4	—	—	—	—	—	182	—	—	—	182
Common and commingled trusts - Bonds	4	207	—	—	—	207	421	—	—	—	421
Common and commingled trusts - Short Term Investments	4	31	—	—	—	31	24	—	—	—	24
Common and commingled trusts - Balanced	4	—	—	—	—	—	68	—	—	—	68
Partnership/joint venture interests - Real estate	5	5	—	—	—	5	—	—	—	—	—
Partnership/joint venture interests - Other	5	5	—	—	—	5	—	—	—	—	—
Mutual funds	4	53	53	—	—	—	—	—	—	—	—
Hedge Funds	5	—	—	—	—	—	—	—	—	—	—
Insurance products	4	—	—	—	—	—	1	—	1	—	—
Real estate and other	5	—	—	—	—	—	129	—	—	129	—
Total		\$ 1,444	\$ 53	\$ 1,119	\$ —	\$ 272	\$ 1,086	\$ 56	\$ 199	\$ 131	\$ 700

Notes:

- Common stocks are valued based on quoted market prices at the closing price as reported on the active market on which the individual securities are traded.
- Government securities are valued based on yields currently available on comparable securities of issuers with similar credit ratings. When quoted prices are not available for identical or similar securities, the security is valued under a discounted cash flows approach that maximizes observable inputs, such as current yields on similar instruments but includes adjustments for certain risks that may not be observable, such as credit and liquidity risks.
-

Corporate debt is valued primarily based on observable market quotations for similar bonds at the closing price reported on the active market on which the individual securities are traded. When such quoted prices are not available, the bonds are valued using a discounted cash flows approach using current yields on similar instruments of issuers with similar credit ratings.

- Common/collective trusts and registered investment companies (RICs) such as mutual funds are valued using a Net Asset Value (NAV) provided by the manager of each fund. The NAV is based on the underlying net assets owned by the fund, divided by the number of shares or units outstanding. The fair value of the underlying securities within the fund, which are generally traded on an active market, are valued at the closing price reported on the active market on which those individual securities are traded. For investments not traded on an active market, or for which a quoted price is not publicly available, a variety of unobservable valuation methodologies, including discounted cash flow, market multiple and cost valuation approaches, are employed by the fund manager or independent third party to value investments.
- 4.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Partnership/joint ventures and hedge funds are valued based on the fair value of the underlying securities within the fund, which include investments both traded on an active market and not traded on an active market. For those investments that are traded on an active market, the values are based on the closing price reported on the active market on which those individual securities are traded and in the case of hedge funds they are valued using a Net Asset Value (NAV) provided by the manager of each fund. For investments not traded on an active market, or for which a quoted price is not publicly available, a variety of unobservable valuation methodologies, including discounted cash flow, market multiples and cost valuation approaches, are employed by the fund manager to value investments.

The following table presents the reconciliation of the beginning and ending balances of those plan assets classified within Level 3 of the valuation hierarchy. When the determination is made to classify the plan assets within Level 3, the determination is based upon the significance of the unobservable inputs to the overall fair value measurement.

In millions	International Pension Plans
Balance, December 31, 2016	\$ 124
Realized and unrealized gains and losses, net	7
Purchases, sales and settlements, net	—
Transfers, net	—
Balance, December 31, 2017	\$ 131
Realized and unrealized gains and losses, net	—
Purchases, sales and settlements, net	—
Transfers, net	(2)
Balance, December 31, 2018	\$ 129

Investment Strategy NCR has historically employed a total return investment approach, whereby a mix of fixed-income, equities and real estate investments are used to maximize the long-term return of plan assets subject to a prudent level of risk. The risk tolerance is established for each plan through a careful consideration of plan liabilities, plan funded status and corporate financial condition. To reduce volatility in the value of assets held by the U.S. pension plan, we have rebalanced the asset allocation to a portfolio of 98% of fixed income assets as of December 31, 2018. Similar investment strategy changes are under consideration or being implemented in a number of NCR's international plans.

The investment portfolios contain primarily fixed-income investments, which are diversified across U.S. and non-U.S. issuers, type of fixed-income security (i.e., government bonds, corporate bonds, mortgage-backed securities) and credit quality. The investment portfolios also contain a blend of equity investments, which are diversified across U.S. and non-U.S. stocks, small and large capitalization stocks, and growth and value stocks, primarily of non-U.S. issuers. Where applicable, real estate investments are made through real estate securities, partnership interests or direct investment and are diversified by property type and location. Other assets, such as cash or private equity are used judiciously to improve portfolio diversification and enhance risk-adjusted portfolio returns. Derivatives may be used to adjust market exposures in an efficient and timely manner. Due to the timing of security purchases and sales, cash held by fund managers is classified in the same asset category as the related investment. Rebalancing algorithms are applied to keep the asset mix of the plans from deviating excessively from their targets. Investment risk is measured and monitored on an ongoing basis through regular performance reporting, investment manager reviews, actuarial liability measurements and periodic investment strategy reviews.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Postretirement Plans Reconciliation of the beginning and ending balances of the benefit obligation for NCR's U.S. postretirement plan is as follows:

In millions	Postretirement Benefits	
	2018	2017
Change in benefit obligation		
Benefit obligation as of January 1	\$ 21	\$ 25
Interest cost	—	1
Actuarial gain	(3)	(3)
Plan participant contributions	1	—
Benefits paid	(1)	(2)
Benefit obligation as of December 31	\$ 18	\$ 21

The following table presents the funded status and the reconciliation of the funded status to amounts recognized in the Consolidated Balance Sheets and in accumulated other comprehensive loss as of December 31:

In millions	Postretirement Benefits	
	2018	2017
Benefit obligation	\$(18)	\$(21)
Amounts recognized in the Consolidated Balance Sheets		
Current liabilities	\$(2)	\$(2)
Noncurrent liabilities	(16)	(19)
Net amounts recognized	\$(18)	\$(21)
Amounts recognized in accumulated other comprehensive loss		
Net actuarial loss	\$7	\$11
Prior service benefit	(8)	(13)
Total	\$(1)	\$(2)

The net periodic benefit income of the postretirement plan for the years ended December 31 was:

In millions	Postretirement Benefits		
	2018	2017	2016
Interest cost	\$—	\$1	\$1
Amortization of:			
Prior service benefit	(5)	(6)	(14)
Actuarial loss	1	2	2
Net periodic benefit income	\$(4)	\$(3)	\$(11)

The assumptions utilized in accounting for postretirement benefit obligations as of December 31 and for postretirement benefit income for the years ended December 31 were:

	Postretirement Benefit Obligations			Postretirement Benefit Costs		
	2018	2017	2016	2018	2017	2016
Discount rate	3.7 %	3.1 %	3.2 %	3.1 %	3.2 %	3.3 %

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Assumed healthcare cost trend rates as of December 31 were:

	2018		2017	
	Pre-65	Post-65	Pre-65	Post-65
	Coverage	Coverage	Coverage	Coverage
Healthcare cost trend rate assumed for next year	7.1 %	6.1 %	6.6 %	5.9 %
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	5.0 %	5.0 %	5.0 %	5.0 %
Year that the rate reaches the ultimate rate	2027	2027	2025	2025

In addition, a one percentage point change in assumed healthcare cost trend rates would have had an immaterial impact on the postretirement benefit income and obligation.

Postemployment Benefits Reconciliation of the beginning and ending balances of the benefit obligation for NCR's postemployment plan was:

	Postemployment Benefits	
In millions	2018	2017
Change in benefit obligation		
Benefit obligation as of January 1	\$ 142	\$ 127
Service cost	43	34
Interest cost	3	2
Benefits paid	(40)	(34)
Foreign currency exchange	(6)	9
Actuarial (gain) loss	(3)	4
Benefit obligation as of December 31	\$ 139	\$ 142

The following table presents the funded status and the reconciliation of the unfunded status to amounts recognized in the Consolidated Balance Sheets and in accumulated other comprehensive loss at December 31:

	Postemployment Benefits	
In millions	2018	2017
Benefit obligation	\$(139)	\$(142)
Amounts recognized in the Consolidated Balance Sheets		
Current liabilities	\$(37)	\$(28)
Noncurrent liabilities	(102)	(114)
Net amounts recognized	\$(139)	\$(142)
Amounts recognized in accumulated other comprehensive loss		
Net actuarial gain	\$(28)	\$(20)
Prior service benefit	(6)	(11)
Total	\$(34)	\$(31)

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

The net periodic benefit cost of the postemployment plan for the years ended December 31 was:

In millions	Postemployment Benefits		
	2018	2017	2016
Service cost	\$43	\$34	\$16
Interest cost	3	2	3
Amortization of:			
Prior service benefit	(5)	(6)	(6)
Actuarial gain	(1)	(6)	(7)
Net benefit cost	\$40	\$24	\$6
Restructuring severance cost	—	—	4
Net periodic benefit cost	\$40	\$24	\$10

The weighted average assumptions utilized in accounting for postemployment benefit obligations as of December 31 and for postemployment benefit costs for the years ended December 31 were:

	Postemployment Benefit Obligations		Postemployment Benefit Costs		
	2018	2017	2018	2017	2016
Discount rate	2.4 %	2.3 %	2.3 %	2.0 %	2.2 %
Salary increase rate	1.9 %	1.9 %	1.9 %	1.8 %	2.1 %
Involuntary turnover rate	4.3 %	4.8 %	4.8 %	4.8 %	4.8 %

Cash Flows Related to Employee Benefit Plans

Cash Contributions NCR does not plan to contribute to the U.S. qualified pension plan in 2019, and plans to contribute approximately \$28 million to the international pension plans in 2019. The Company also plans to make contributions of approximately \$2 million to the U.S. postretirement plan and approximately \$30 million to the postemployment plan in 2019.

Estimated Future Benefit Payments NCR expects to make the following benefit payments reflecting past and future service from its pension, postretirement and postemployment plans:

In millions	U.S. Pension Benefits	International Pension Benefits	Total Pension Benefits	Postretirement Benefits	Postemployment Benefits
Year					
2019	\$ 105	\$ 50	\$ 155	\$ 2	\$ 30
2020	\$ 107	\$ 50	\$ 157	\$ 2	\$ 20
2021	\$ 110	\$ 49	\$ 159	\$ 2	\$ 19
2022	\$ 112	\$ 50	\$ 162	\$ 1	\$ 17
2023	\$ 114	\$ 48	\$ 162	\$ 1	\$ 16
2024-2028	\$ 581	\$ 255	\$ 836	\$ 4	\$ 66

Savings Plans U.S. employees and many international employees participate in defined contribution savings plans. These plans generally provide either a specified percent of pay or a matching contribution on participating employees'

voluntary elections. NCR's matching contributions typically are subject to a maximum percentage or level of compensation. Employee contributions can be made pre-tax, after-tax or a combination thereof. The expense under the U.S. plan was approximately \$27 million in 2018, \$26 million in 2017, and \$24 million in 2016. The expense under international and subsidiary savings plans was \$24 million in 2018, \$24 million in 2017, and \$26 million in 2016.

Amounts to be Recognized The amounts in accumulated other comprehensive loss that are expected to be recognized as components of net periodic benefit cost (income) during 2019 are as follows:

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions	U.S. Pension Benefits	International Pension Benefits	Total Pension Benefits	Postretirement Benefits	Postemployment Benefits
Prior service cost (benefit)	\$ —	\$ 1	\$ 1	\$ (5)	\$ (2)
Actuarial loss (gain)	\$ —	\$ —	\$ —	\$ 1	\$ (2)

10. COMMITMENTS AND CONTINGENCIES

In the normal course of business, NCR is subject to various proceedings, lawsuits, claims and other matters, including, for example, those that relate to the environment and health and safety, labor and employment, employee benefits, import/export compliance, intellectual property, data privacy and security, product liability, commercial disputes and regulatory compliance, among others. Additionally, NCR is subject to diverse and complex laws and regulations, including those relating to corporate governance, public disclosure and reporting, environmental safety and the discharge of materials into the environment, product safety, import and export compliance, data privacy and security, antitrust and competition, government contracting, anti-corruption, and labor and human resources, which are rapidly changing and subject to many possible changes in the future. Compliance with these laws and regulations, including changes in accounting standards, taxation requirements, and federal securities laws among others, may create a substantial burden on, and substantially increase costs to NCR or could have an impact on NCR's future operating results. The Company has reflected all liabilities when a loss is considered probable and reasonably estimable in the Consolidated Financial Statements. We do not believe there is a reasonable possibility that losses exceeding amounts already recognized have been incurred, but there can be no assurances that the amounts required to satisfy alleged liabilities from such matters will not impact future operating results. Other than as stated below, the Company does not currently expect to incur material capital expenditures related to such matters. However, there can be no assurances that the actual amounts required to satisfy alleged liabilities from various lawsuits, claims, legal proceedings and other matters, including, but not limited to the Fox River and Kalamazoo River environmental matters and other matters discussed below, and to comply with applicable laws and regulations, will not exceed the amounts reflected in NCR's Consolidated Financial Statements or will not have a material adverse effect on its consolidated results of operations, capital expenditures, competitive position, financial condition or cash flows.

In June 2014, one of the Company's Brazilian subsidiaries, NCR Manaus, was notified of a Brazilian federal tax assessment of R168 million, or approximately \$43 million as of December 31, 2018, including penalties and interest regarding certain federal indirect taxes for 2010 through 2012. The assessment alleges improper importation of certain components into Brazil's free trade zone that would nullify related indirect tax incentives. We have not recorded an accrual for the assessment, as the Company believes it has a valid position regarding indirect taxes in Brazil and, as such, has filed an appeal in 2014. In December 2017, the Company prevailed in this appeal regarding substantially all of the disputed amounts. However, the Brazilian federal tax authority has further appealed this dispute to the next procedural level, so the dispute is ongoing. In further proceedings on this matter, an intermediate tribunal decided in NCR's favor in August 2018; a written opinion had not been issued as of December 31, 2018, but is expected soon. The Brazilian tax authorities will have the ability to appeal the decision. The Company estimated the aggregate risk related to this matter to be between zero and \$64 million as of December 31, 2018. Although the Company has not recorded an accrual, it is possible that the Company could be required to pay taxes, penalties and interest related to this matter, which could be material to the Company's Consolidated Financial Statements.

Environmental Matters NCR's facilities and operations are subject to a wide range of environmental protection laws, and NCR has investigatory and remedial activities underway at a number of facilities that it currently owns or

operates, or formerly owned or operated, to comply, or to determine compliance, with such laws. Also, NCR has been identified, either by a government agency or by a private party seeking contribution to site clean-up costs, as a potentially responsible party (PRP) at a number of sites pursuant to various state and federal laws, including the Federal Water Pollution Control Act, the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and comparable state statutes. Other than the Fox River matter and the Kalamazoo River matter discussed below, we currently do not anticipate material expenses and liabilities from these environmental matters.

Fox River NCR is one of eight entities that were formally notified by governmental and other entities, such as local Native American tribes, that they are PRPs for environmental claims (under CERCLA and other statutes) arising out of the presence of polychlorinated biphenyls (PCBs) in sediments in the lower Fox River and in the Bay of Green Bay in Wisconsin. The other Fox River PRPs that received notices include Appleton Papers Inc. (API; now known as Appvion, Inc.), P.H. Glatfelter Company ("Glatfelter"), Georgia-Pacific Consumer Products LP (GP, successor to Fort James Operating Company), and others. NCR was identified as a PRP because of alleged PCB discharges from two carbonless copy paper manufacturing facilities it previously owned, which were located along the Fox River. NCR sold its facilities in 1978 to API. The parties have also contended that NCR is responsible for PCB discharges

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

from paper mills owned by other companies because NCR carbonless copy paper "broke" was allegedly purchased by those other mills as a raw material.

The United States Environmental Protection Agency (USEPA) and Wisconsin Department of Natural Resources (together, the Governments) developed clean-up plans for the upper and lower parts of the Fox River and for portions of the Bay of Green Bay. On November 13, 2007, the Governments issued a unilateral administrative order (the 2007 Order) under CERCLA to the eight original PRPs, requiring them to perform remedial work under the Governments' clean-up plan for the lower parts of the river (operable units 2 through 5). In April 2009, NCR and API formed a limited liability company (the LLC), which entered into an agreement with an environmental remediation contractor to perform the work at the Fox River site. In-water dredging and remediation under the clean-up plan commenced shortly thereafter.

NCR and API, along with B.A.T Industries p.l.c. (BAT), share among themselves a portion of the cost of the Fox River clean-up and natural resource damages (NRD) based upon a 1998 agreement (the Cost Sharing Agreement), a 2005 arbitration award (subsequently confirmed as a judgment), and a September 30, 2014 Funding Agreement (the Funding Agreement). The Cost Sharing Agreement and the arbitration resolved disputes that arose out of the Company's 1978 sale of its Fox River facilities to API. The Cost Sharing Agreement and arbitration award resulted in a 45% share for NCR of the first \$75 million of such costs (a threshold that was reached in 2008), and a 40% share for amounts in excess of \$75 million. The Funding Agreement arose out of a 2012 to 2014 arbitration dispute between NCR and API, and provides for regular, ongoing funding of NCR incurred Fox River remediation costs via contributions, made to a new limited liability corporation created by the Funding Agreement, by BAT, API and, for 2014, API's indemnitor, Windward Prospects. The Funding Agreement creates an obligation on BAT and API to fund 50% of NCR's Fox River remediation costs from October 1, 2014 forward (API's Fox River-related obligations under the Funding Agreement were fully satisfied in 2016); the Funding Agreement also provides NCR contractual avenues for payment of, via direct and third-party sources, (1) the difference between BAT's and API's 60% obligation under the Cost Sharing Agreement and arbitration award on the one hand and their ongoing (since September 2014) 50% payments under the Funding Agreement on the other, as well as (2) the difference between the amount NCR received under the Funding Agreement and the amount owed to it under the Cost Sharing Agreement and arbitration award for the period from April 2012 through September 2014. For the years ended December 31, 2018 and 2017, the receivable under the Funding Agreement was approximately \$45 million and \$38 million, respectively, and was included in other assets in the Consolidated Balance Sheet. The Company anticipates that it will collect sums related to the receivable in 2019 or later, likely after the remediation efforts related to the Fox River matter, described below, are complete. This receivable is not taken into account in calculating the Company's Fox River net reserve.

The Company's litigations relating to contribution and enforcement claims concerning the Fox River have largely been concluded. A proposed consent decree settlement (the CD settlement) with respect to the contribution action (a case originally filed by NCR and API) and the government enforcement action (a case originally filed by the federal and state governments against several PRPs, including the Company) was successfully negotiated by NCR and the federal and state governments and was approved on August 22, 2017 by the federal district court in Wisconsin that had been presiding over those cases. A final order of dismissal as to the Company in the contribution and government enforcement actions was subsequently entered; one party, Glatfelter, has appealed the approval of the CD settlement. On January 3, 2019, the United States lodged a proposed consent decree with the Wisconsin court, reflecting a settlement reached by the United States, Wisconsin and Glatfelter with respect to Glatfelter's Fox River liability under the government enforcement action; a component of that settlement is withdrawal of Glatfelter's appeal opposing the Company's CD settlement. Glatfelter requested a stay of that appeal, and the appellate court granted the stay and

suspended appellate proceedings on January 15, 2019, pending action by the Wisconsin court on the proposed consent decree.

The CD settlement, if approved on appeal or if, as discussed above, the appeal is withdrawn, is expected to resolve the remaining Fox River-related contribution and enforcement claims against the Company. The key components of the approved CD settlement include (1) the Company's commitment to complete the remediation of the Fox River, which is now expected to be completed in 2019 or 2020; (2) the Company's conditional agreement to waive its contribution claims against the two remaining defendants in the case, GP and Glatfelter; (3) the Company's agreement not to appeal the trial court's decision on divisibility of harm; (4) the Governments' agreement to include in the settlement so-called "contribution protection" in the Company's favor as to GP's and Glatfelter's contribution claims against the Company, the effect of which will be to extinguish those claims; (5) the Governments' agreement not to pursue the Company for the Governments' past oversight costs; and (6) the Governments' agreement to exercise prosecutorial discretion in pursuing other parties for future oversight costs and long-term monitoring and maintenance, with the Company retaining so-called "backstop" liability in the event that the other parties fail to pay future oversight costs or to perform long-term monitoring and maintenance. Additionally, although certain state law claims by GP and Glatfelter against the Company may not be affected directly by the CD settlement, the CD settlement provides that the Company's contribution claims against those two parties will revive if those parties attempt to assert any claims against the Company relating to the Fox River, including any state law claims.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In the quarter ending September 30, 2017, the remediation general contractor commenced an arbitration against the LLC, in a dispute over contract interpretation. That dispute is scheduled for a hearing in mid-2019. The amounts claimed by the contractor range from approximately \$35 million to approximately \$45 million; the Company disputes the claims and is contesting them vigorously. To the extent, if any, that the contractor's claims are successful, the Company's indemnitors and co-obligors, described below, would be expected to bear responsibility for the majority of any award, with the Company's share approximately one-fourth of such award.

With respect to the Company's prior dispute with API, which was generally superseded by the Funding Agreement, the Company received timely payments as they came due under the Funding Agreement. Although API filed for bankruptcy protection in October 2017, it had made all of the payments to the Company in connection with the Fox River that are required of it by the Funding Agreement.

NCR's eventual remediation liability, followed by long-term monitoring expected to be performed by others, will depend on a number of factors. In establishing the reserve, NCR attempts to estimate a range of reasonably possible outcomes for each of these factors, although each range is itself uncertain. NCR uses its best estimate within the range, if that is possible. Where there is a range of equally possible outcomes, and there is no amount within that range that is considered to be a better estimate than any other amount, NCR uses the low end of the range. The significant factors include: (1) the total remaining clean-up costs (in-river remediation is expected to be completed in 2019, depending on the outcome of certain requests made by the governments concerning additional dredging, the expected cost impact of which is expected to be neutral or non-material to the Company), including long-term monitoring following completion of the clean-up, and what parties are assigned to discharge the post-clean-up tasks (as noted, the Company no longer expects to bear long-term monitoring costs); (2) total NRD for the site and the share that NCR will bear (which is now resolved as to the Company); (3) the share of clean-up costs that NCR will bear (which is resolved under the CD settlement); (4) NCR's transaction and litigation costs to defend itself in this matter (with remaining litigation expected to be limited to the Glatfelter appeal, which as noted is now expected to be dismissed, and the claim brought by the general contractor, both referenced above); and (5) the share of NCR's payments that BAT will bear (which is governed by the Cost Sharing Agreement and the Funding Agreement, BAT has made all of the payments requested of it, and as discussed above; API is in bankruptcy and is not presumed likely to bear further shares of NCR's payments). With respect to NRD, in connection with a certain settlement entered into by other PRPs in 2015, the Government withdrew the NRD claims it had prosecuted on behalf of NRD trustees, including those NRD claims asserted against the Company.

Calculation of the Company's Fox River reserve is subject to several complexities, and it is possible there could be additional changes to some elements of the reserve over upcoming periods, although the Company is unable to predict or estimate such changes at this time. There can be no assurance that the clean-up and related expenditures and liabilities will not have a material effect on NCR's capital expenditures, earnings, financial condition, cash flows, or competitive position. As of December 31, 2018 and 2017, the gross reserve for the Fox River matter was approximately \$21 million and \$36 million, respectively. As of December 31, 2018 and 2017, the net reserve for the Fox River matter was approximately \$17 million and \$35 million, respectively. The change in the net reserve is primarily due to ongoing payments for clean-up activities. NCR contributes to the LLC to fund remediation activities and generally, by contract, has funded certain amounts of remediation expenses in advance. As of December 31, 2018 and 2017, approximately zero remained from this funding. NCR's reserve for the Fox River matter is reduced as the LLC makes payments to the remediation contractor and other vendors with respect to remediation activities.

Under a 1996 agreement, AT&T Corp. (AT&T) and Nokia (as the successor to Lucent Technologies and Alcatel-Lucent USA) are responsible severally (not jointly) for indemnifying NCR for certain portions of the amounts

paid by NCR for the Fox River matter over a defined threshold and subject to certain offsets. (The agreement governs certain aspects of AT&T's divestiture of NCR and of what was then known as Lucent Technologies.) Those companies have made the payments requested of them by the Company on an ongoing basis.

Kalamazoo River In November 2010, USEPA issued a "general notice letter" to NCR with respect to the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site (Kalamazoo River site) in Michigan. Three other companies - International Paper, Mead Corporation, and Consumers Energy - also received general notice letters at or about the same time. USEPA asserts that the site is contaminated by various substances, primarily PCBs, as a result of discharges by various paper mills located along the river. USEPA does not claim that the Company made direct discharges into the Kalamazoo River, and NCR never had facilities at or near the Kalamazoo River site, but USEPA indicated that "NCR may be liable under Section 107 of CERCLA ... as an arranger, who by contract or agreement, arranged for the disposal, treatment and/or transportation of hazardous substances at the Site." USEPA stated that it "may issue special notice letters to [NCR] and other PRPs for future RI/FS [remedial investigation / feasibility studies] and RD/RA [remedial design / remedial action] negotiations."

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In connection with the Kalamazoo River site, in December 2010 the Company, along with two other defendants, was sued in federal court by three Georgia-Pacific (GP) affiliate corporations in a private-party contribution and cost recovery action for alleged pollution. The suit, pending in Michigan, asks that the Company and other defendants pay a "fair portion" of these companies' costs. Various removal and remedial actions remain to be decided upon and performed at the Kalamazoo River site, the costs for which generally have not yet been determined; in 2017 Records of Decisions were issued for two parts of the river, and in 2018 such a decision was issued for another part of the river, but such decisions for the majority of the work are expected to be made only over the next several years. The suit alleges that the Company is liable to the GP entities as an "arranger" under CERCLA. The initial phase of the case was tried in a Michigan federal court in February 2013; on September 26, 2013 the court issued a decision that held NCR was liable as an "arranger" as of at least March 1969. (PCB-containing carbonless copy paper was produced from approximately 1954 to April 1971, and the majority of contamination at the Kalamazoo River site had occurred prior to 1969). NCR preserved its right to appeal the September 2013 decision.

In the 2013 decision the Court did not determine NCR's share of the overall liability. Relative shares of liability for the four companies were tried to the court in a subsequent phase of the case in December 2015. In a ruling issued on March 29, 2018, the court addressed responsibility for the costs that GP had incurred in the past, totaling to approximately \$50 million (GP had sought approximately \$105 million, but \$55 million of those claims were removed by the court upon motions filed by the Company and other parties); NCR and GP were each assigned a 40% share of those costs, and the other two companies were assigned 15% and 5% as their allocations. The court entered a judgment in the case on June 19, 2018, in which it indicated that it would not allocate future costs, but would enter a declaratory judgment that the four companies together had responsibility for future costs, in amounts and shares to be determined. Cross-proceedings have been commenced to obtain recoveries from the other parties pursuant to the judgment; those proceedings are stayed pending the appeal referenced below.

NCR expects to have claims against BAT and API under the Funding Agreement discussed above for the Kalamazoo River remediation expenses. API filed for bankruptcy protection in October 2017, and thus payment of its potential share under the Funding Agreement for so-called "future sites," which would include the Kalamazoo River site, may be at risk, but as liability under the Cost Sharing Agreement and the Funding Agreement is joint and several, the bankruptcy is not anticipated to affect the Company's ability to seek that amount from BAT. The Company will also have indemnity or reimbursement claims against AT&T and Nokia under the arrangement discussed above in connection with the Fox River matter after expenses have met a contractual threshold set out in the 1996 agreement referenced above in the Fox River discussion.

In light of the 2018 decision, the Company increased its reserve for the Kalamazoo River matter to \$47 million as of December 31, 2018 as compared to \$1 million as of December 31, 2017; that figure is reported on a basis that is net of expected contributions from the Company's co-obligors and, if and when the applicable threshold is reached, its indemnitors. As many aspects of the costs of remediation will not be determined for several years (and thus the high end of a range of possible costs for many areas of the site cannot be quantified at this time), the Company has made what it considers to be reasonable estimates of the low end of a range for such costs where remedies are identified, and/or of the costs of investigations and studies for areas of the river where remedies have not yet been determined, and the reserve is informed by those estimates. The extent of NCR's potential liability remains subject to many uncertainties, particularly inasmuch as remedy decisions and cost estimates will not be generated until times in the future and as most of the work to be performed will not take place until the 2020s and 2030s. Under other assumptions or estimates for possible costs of remediation, which the Company does not at this point consider to be reasonably estimable or verifiable, it is possible that the reserve the Company has taken to discontinued operations reflected in

this paragraph could more than double the reflected reserve.

In July 2018 the Company appealed to the United States Court of Appeals for the Sixth Circuit both the 2013 court decision, which it believes is in conflict with a decision from the Fox River trial court as to Operable Unit 1 of that site and an affirmance of that decision from the Court of Appeals for the Seventh Circuit, and the 2018 court decision, on various legal grounds. The Company filed a bond to stay any execution of the judgment pending the appeal, and its application for a stay was approved by the court.

Environmental-Related Insurance Recoveries In connection with the Fox River and other environmental sites, through December 31, 2018, NCR has received a combined gross total of approximately \$202 million in settlements reached with various of its insurance carriers. Portions of many of these settlements agreed in the 2010 through 2013 timeframe are payable to a law firm that litigated the claims on the Company's behalf. Some of the settlements cover not only the Fox River but also other environmental sites; some are limited to either the Fox River or the Kalamazoo River site. Some of the settlements are directed to defense costs and some are directed to indemnity; some settlements cover both defense costs and indemnity. The Company does not anticipate that further material insurance recoveries specific to Kalamazoo River remediation costs will be available to it, owing to considerations under applicable Michigan law. Claims with respect to Kalamazoo River defense costs have now been settled, with the amounts of those settlements included in the sum reported above.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Environmental Remediation Estimates It is difficult to estimate the future financial impact of environmental laws, including potential liabilities. NCR records environmental provisions when it is probable that a liability has been incurred and the amount or range of the liability is reasonably estimable; in accordance with accounting guidance, where liabilities are not expected to be quantifiable or estimable for a period of years, the estimated costs of investigating those liabilities are recorded as a component of the reserve for that particular site. Provisions for estimated losses from environmental restoration and remediation are, depending on the site, based generally on internal and third-party environmental studies, estimates as to the number and participation level of other PRPs, the extent of contamination, estimated amounts for attorney and other fees, and the nature of required clean-up and restoration actions. Reserves are adjusted as further information develops or circumstances change. Management expects that the amounts reserved from time to time will be paid out over the period of investigation, negotiation, remediation and restoration for the applicable sites. The amounts provided for environmental matters in NCR's Consolidated Financial Statements are the estimated gross undiscounted amounts of such liabilities, without deductions for indemnity insurance, third-party indemnity claims or recoveries from other PRPs, except as qualified in the following sentences. In those cases where insurance carriers or third-party indemnitors have agreed to pay any amounts and management believes that collectability of such amounts is probable, the amounts are recorded in the Consolidated Financial Statements. For the Fox River and Kalamazoo sites, as described above, assets relating to the AT&T and Nokia indemnities and to the BAT obligations are recorded as payment is supported by contractual agreements, public filings and/or payment history.

Guarantees and Product Warranties In the ordinary course of business, NCR may issue performance guarantees on behalf of its subsidiaries to certain of its customers and other parties. Some of those guarantees may be backed by standby letters of credit, surety bonds, or similar instruments. In general, under the guarantees, NCR would be obligated to perform, or cause performance, over the term of the underlying contract in the event of an unexcused, uncured breach by its subsidiary, or some other specified triggering event, in each case as defined by the applicable guarantee. NCR believes the likelihood of having to perform under any such guarantee is remote. As of December 31, 2018 and 2017, NCR had no material obligations related to such guarantees, and therefore its Consolidated Financial Statements do not have any associated liability balance.

NCR provides its customers a standard manufacturer's warranty and records, at the time of the sale, a corresponding estimated liability for potential warranty costs. Estimated future obligations due to warranty claims are based upon historical factors, such as labor rates, average repair time, travel time, number of service calls per machine and cost of replacement parts. When a sale is consummated, the total customer revenue is recognized, provided that all revenue recognition criteria are otherwise satisfied, and the associated warranty liability is recorded using pre-established warranty percentages for the respective product classes.

From time to time, product design or quality corrections are accomplished through modification programs. When identified, associated costs of labor and parts for such programs are estimated and accrued as part of the warranty reserve.

The Company recorded the activity related to the warranty reserve for the years ended December 31 as follows:

In millions	2018	2017	2016
Warranty reserve liability			
Beginning balance as of January 1	\$ 26	\$ 27	\$ 24
Accruals for warranties issued	42	43	42

Settlements (in cash or in kind)	(42)	(44)	(39)
Ending balance as of December 31	\$ 26	\$ 26	\$ 27

In addition, NCR provides its customers with certain indemnification rights. In general, NCR agrees to indemnify the customer if a third party asserts patent or other infringement on the part of its customers for its use of the Company's products subject to certain conditions that are generally standard within the Company's industries. On limited occasions the Company will undertake additional indemnification obligations for business reasons. From time to time, NCR also enters into agreements in connection with its acquisition and divestiture activities that include indemnification obligations by the Company. The fair value of these indemnification obligations is not readily determinable due to the conditional nature of the Company's potential obligations and the specific facts and circumstances involved with each particular agreement. The Company has not recorded a liability in connection with these indemnifications, and no current indemnification instance is material to the Company's financial position. Historically, payments made by the Company under these types of agreements have not had a material effect on the Company's consolidated financial condition, results of operations or cash flows.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Purchase Commitments The Company has purchase commitments for materials, supplies, services, and property, plant and equipment as part of the normal course of business. This includes a long-term service agreement with Accenture under which many of NCR's key transaction processing activities and functions are performed.

Leases NCR conducts certain of its sales and manufacturing operations using leased facilities, and also operates certain equipment and vehicles under leases, the initial lease terms of which vary in length. Many of the leases contain renewal options and escalation clauses that are not material to the overall lease portfolio. Our lease obligations also include amounts owed for our world headquarters in Atlanta, Georgia. Future minimum lease payments under non-cancelable operating leases as of December 31, 2018, for the following fiscal years are:

In millions	2019	2020	2021	2022	2023
Minimum lease obligations	\$ 128	\$ 96	\$ 80	\$ 64	\$ 50

Total rental expense for operating leases was \$148 million in 2018, \$144 million in 2017, and \$132 million in 2016.

11. DERIVATIVES AND HEDGING INSTRUMENTS

NCR is exposed to risks associated with changes in foreign currency exchange rates and interest rates. NCR utilizes a variety of measures to monitor and manage these risks, including the use of derivative financial instruments. NCR has exposure to approximately 50 functional currencies. Since a substantial portion of our operations and revenue occur outside the U.S., and in currencies other than the U.S. Dollar, our results can be significantly impacted, both positively and negatively, by changes in foreign currency exchange rates.

Foreign Currency Exchange Risk The accounting guidance for derivatives and hedging requires companies to recognize all derivative instruments as either assets or liabilities at fair value in the Consolidated Balance Sheets. The Company designates foreign exchange contracts as cash flow hedges of forecasted transactions when they are determined to be highly effective at inception.

Our risk management strategy includes hedging, on behalf of certain subsidiaries, a portion of our forecasted, non-functional currency denominated cash flows for a period of up to 15 months. As a result, some of the impact of currency fluctuations on non-functional currency denominated transactions (and hence on subsidiary operating income, as stated in the functional currency), is mitigated in the near term. The amount we hedge and the duration of hedge contracts may vary significantly. In the longer term (greater than 15 months), the subsidiaries are still subject to the effect of translating the functional currency results to U.S. Dollars. To manage our exposures and mitigate the impact of currency fluctuations on the operations of our foreign subsidiaries, we hedge our main transactional exposures through the use of foreign exchange forward and option contracts. This is primarily done through the hedging of foreign currency denominated inter-company inventory purchases by NCR's marketing units and the foreign currency denominated inputs to our manufacturing units. The related foreign exchange contracts are designated as highly effective cash flow hedges. The gains or losses on these hedges are deferred in accumulated other comprehensive income (AOCI) and reclassified to income when the underlying hedged transaction is recorded in earnings. As of December 31, 2018, the balance in AOCI related to foreign exchange derivative transactions was a gain of \$2 million. The gains or losses from derivative contracts related to inventory purchases are recorded in cost of products when the inventory is sold to an unrelated third party.

We also utilize foreign exchange contracts to hedge our exposure of assets and liabilities denominated in non-functional currencies. We recognize the gains and losses on these types of hedges in earnings as exchange rates

change. We do not enter into hedges for speculative purposes.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

The following tables provide information on the location and amounts of derivative fair values in the Consolidated Balance Sheets:

In millions	Fair Values of Derivative Instruments December 31, 2018					
	Balance Sheet Location	Notional Amount	Fair Value	Balance Sheet Location	Notional Amount	Fair Value
Derivatives designated as hedging instruments						
Foreign exchange contracts	Other current assets	\$169	\$4	Other current liabilities	\$—	\$—
Total derivatives designated as hedging instruments			\$4			\$—
Derivatives not designated as hedging instruments						
Foreign exchange contracts	Other current assets	\$219	\$1	Other current liabilities	\$157	\$1
Total derivatives not designated as hedging instruments			\$1			\$1
Total derivatives			\$5			\$1

In millions	Fair Values of Derivative Instruments December 31, 2017					
	Balance Sheet Location	Notional Amount	Fair Value	Balance Sheet Location	Notional Amount	Fair Value
Derivatives designated as hedging instruments						
Foreign exchange contracts	Other current assets	\$104	\$—	Other current liabilities	\$142	\$1
Total derivatives designated as hedging instruments			\$—			\$1
Derivatives not designated as hedging instruments						
Foreign exchange contracts	Other current assets	\$101	\$1	Other current liabilities	\$292	\$1
Total derivatives not designated as hedging instruments			\$1			\$1
Total derivatives			\$1			\$2

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

The effects of derivative instruments on the Consolidated Statement of Operations for the years ended December 31 were as follows:

In millions	Amount of Gain (Loss) Recognized in Other Comprehensive Income (OCI) on Derivative (Effective Portion)			Location of (Gain) Loss Reclassified from AOCI into the Consolidated Statement of Operations (Effective Portion)	Amount of (Gain) Loss Reclassified from AOCI into the Consolidated Statement of Operations (Effective Portion)		
	For the year ended December 31, 2018	For the year ended December 31, 2017	For the year ended December 31, 2016		For the year ended December 31, 2018	For the year ended December 31, 2017	For the year ended December 31, 2016
Derivatives in Cash Flow Hedging Relationships							
Interest rate swap	\$—	\$—	\$—	Interest expense	\$—	\$—	\$2
Foreign exchange contracts	\$11	\$(16)	\$19	Cost of products	\$(7)	\$(1)	\$(3)
In millions	Amount of Gain (Loss) Recognized in the Consolidated Statement of Operations						
Derivatives not Designated as Hedging Instruments	Location of Gain (Loss) Recognized in the Consolidated Statement of Operations			For the year ended December 31, 2018	For the year ended December 31, 2017	For the year ended December 31, 2016	
Foreign exchange contracts	Other income (expense), net			\$(9)	\$(4)	\$(1)	

Refer to Note 12, "Fair Value of Assets and Liabilities" for further information on derivative assets and liabilities recorded at fair value on a recurring basis.

Concentration of Credit Risk

NCR is potentially subject to concentrations of credit risk on accounts receivable and financial instruments such as hedging instruments and cash and cash equivalents. Credit risk includes the risk of nonperformance by counterparties. The maximum potential loss may exceed the amount recognized on the Consolidated Balance Sheets. Exposure to credit risk is managed through credit approvals, credit limits, selecting major international financial institutions as counterparties to hedging transactions and monitoring procedures. NCR's business often involves large transactions with customers, and if one or more of those customers were to default on its obligations under applicable contractual arrangements, the Company could be exposed to potentially significant losses. However, management believes that the reserves for potential losses are adequate. As of December 31, 2018 and 2017, NCR did not have any major concentration of credit risk related to financial instruments.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

12. FAIR VALUE OF ASSETS AND LIABILITIES

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities recorded at fair value on a recurring basis as of December 31, 2018 and 2017 are set forth as follows:

In millions	December 31, 2018 Fair Value Measurements Using				December 31, 2017 Fair Value Measurements Using			
	December 31, 2018	Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	December 31, 2017	Markets for Identical Assets (Level 1)	Significant Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Assets:								
Deposits held in money market mutual funds ⁽¹⁾	\$8	\$8	\$—	\$—	\$90	\$90	\$—	\$—
Foreign exchange contracts ⁽²⁾	5	—	5	—	1	—	1	—
Total	\$13	\$8	\$5	\$—	\$91	\$90	\$1	\$—
Liabilities:								
Foreign exchange contracts ⁽³⁾	1	—	1	—	2	—	2	—
Total	\$1	\$—	\$1	\$—	\$2	\$—	\$2	\$—

⁽¹⁾ Included in Cash and cash equivalents in the Consolidated Balance Sheet.⁽²⁾ Included in Other current assets in the Consolidated Balance Sheet.⁽³⁾ Included in Other current liabilities in the Consolidated Balance Sheet.

Deposits Held in Money Market Mutual Funds A portion of the Company's excess cash is held in money market mutual funds which generate interest income based on prevailing market rates. Money market mutual fund holdings are measured at fair value using quoted market prices and are classified within Level 1 of the valuation hierarchy.

Foreign Exchange Contracts As a result of our global operating activities, we are exposed to risks from changes in foreign currency exchange rates, which may adversely affect our financial condition. To manage our exposures and mitigate the impact of currency fluctuations on our financial results, we hedge our primary transactional exposures through the use of foreign exchange forward and option contracts. The foreign exchange contracts are valued using the market approach based on observable market transactions of forward rates and are classified within Level 2 of the valuation hierarchy.

Assets Measured at Fair Value on a Non-recurring Basis

Certain assets have been measured at fair value on a nonrecurring basis using significant unobservable inputs (Level 3). NCR measures certain assets, including intangible assets and cost and equity method investments, at fair value on a non-recurring basis. These assets are recognized at fair value when initially valued and when deemed to be impaired. Additionally, NCR reviews the carrying values of investments when events and circumstances warrant and considers all available evidence in evaluating when declines in fair value are other-than-temporary declines. NCR carries equity investments in privately-held companies at cost or at fair value when NCR recognizes an other-than-temporary impairment charge. No material non-recurring fair value adjustments were recorded during the years ended December 31, 2018, 2017, and 2016.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

13. SEGMENT INFORMATION AND CONCENTRATIONS

The Company manages and reports the following three segments:

Software - Our software offerings include industry-based software platforms, applications and application suites for the financial services, retail, hospitality and small business industries. We also offer a portfolio of other industry-oriented software applications including cash management software, video banking software, fraud and loss prevention applications, check and document imaging, remote-deposit capture and customer-facing mobile and digital banking applications for the financial services industry; and secure electronic and mobile payment solutions, sector-specific point of sale software applications, and back-office inventory and store and restaurant management applications for the retail and hospitality industries. Additionally, we provide ongoing software support and maintenance services, as well as consulting and implementation services for our software solutions.

Services - Our global end-to-end services solutions include assessment and preparation, staging, installation, implementation, and maintenance and support for our solutions. We also provide systems management and complete managed services for our product offerings. In addition, we provide installation, maintenance and servicing for third party networking products and computer hardware from select manufacturers.

Hardware - Our hardware solutions include our suite of financial-oriented self-service ATM-related hardware, and our retail- and hospitality-oriented point of sale terminal, self-checkout kiosk and related hardware. We also offer other self-service kiosks, such as self-check in/out kiosks for airlines, and wayfinding solutions for buildings and campuses.

These segments represent components of the Company for which separate financial information is available that is utilized on a regular basis by the chief operating decision maker in assessing segment performance and in allocating the Company's resources. Management evaluates the performance of the segments based on revenue and segment operating income. Assets are not allocated to segments, and thus are not included in the assessment of segment performance, and consequently, we do not disclose total assets by reportable segment.

The accounting policies used to determine the results of the operating segments are the same as those utilized for the consolidated financial statements as a whole. Intersegment sales and transfers are not material.

To maintain operating focus on business performance, non-operational items are excluded from the segment operating results utilized by our chief operating decision maker in evaluating segment performance and are separately delineated to reconcile back to total reported income from operations.

The following table presents revenue and operating income by segment for the years ended December 31:

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions	2018	2017	2016
Revenue by segment			
Software License	\$308	\$336	\$341
Software Maintenance	366	374	372
Cloud	631	592	556
Professional Services	607	598	572
Software	1,912	1,900	1,841
Services	2,460	2,373	2,306
ATM	979	1,012	1,221
SCO	346	407	351
POS	708	806	674
IPS	—	18	150
Hardware ⁽¹⁾	2,033	2,243	2,396
Consolidated revenue	6,405	6,516	6,543
Operating income by segment			
Software	492	563	573
Services	321	282	198
Hardware ⁽¹⁾	(125)	(5)	59
Subtotal - segment operating income	688	840	830
Other adjustments ⁽²⁾	497	149	156
Income from operations	\$191	\$691	\$674

On May 27, 2016, NCR completed the sale of substantially all of its IPS business to Atlas Holdings. The sale included all dedicated assets of the IPS division worldwide, other than in the MEA region. Accordingly, the revenue and operating income results exclude the results of the IPS operations, except for the IPS MEA operations, from May 27, 2016 through the end of the fourth quarter of 2016.

⁽²⁾ The following table presents the other adjustments for NCR for the years ended December 31:

In millions	2018	2017	2016
Transformation and restructuring costs	\$223	\$29	\$26
Acquisition-related amortization of intangibles	85	115	123
Acquisition-related costs	6	5	7
Goodwill and long-lived asset impairment charges	183	—	—
Total other adjustments	\$497	\$149	\$156

The following table presents revenue from products and services for NCR for the years ended December 31:

In millions	2018	2017	2016
Product revenue	\$2,341	\$2,579	\$2,737
Professional services and installation services revenue	1,094	1,055	1,011
Recurring revenue, including maintenance and cloud revenue	2,970	2,882	2,795
Total revenue	\$6,405	\$6,516	\$6,543

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Revenue is attributed to the geographic area/country to which the product is delivered or in which the service is provided. The following table presents revenue by geographic area for NCR for the years ended December 31:

In millions	2018	%	2017	%	2016	%
Revenue by Geographic Area						
United States	\$3,076	48 %	\$3,224	50 %	\$3,106	47 %
Americas (excluding United States)	631	10 %	585	9 %	637	10 %
Europe, Middle East and Africa (EMEA)	1,751	27 %	1,786	27 %	1,896	29 %
Asia Pacific (APJ)	947	15 %	921	14 %	904	14 %
Consolidated revenue	\$6,405	100 %	\$6,516	100 %	\$6,543	100 %

The following table presents property, plant and equipment by geographic area as of December 31:

In millions	2018	2017
Property, plant and equipment, net		
United States	\$247	\$204
Americas (excluding United States)	13	19
Europe, Middle East and Africa (EMEA)	57	75
Asia Pacific (APJ)	42	43
Consolidated property, plant and equipment, net	\$359	\$341

Concentrations No single customer accounts for more than 10% of NCR's consolidated revenue. As of December 31, 2018, NCR is not aware of any significant concentration of business transacted with a particular customer that could, if suddenly eliminated, have a material adverse effect on NCR's operations. NCR also lacks a concentration of available sources of labor, services, licenses or other rights that could, if suddenly eliminated, have a material adverse effect on its operations.

A number of NCR's products, systems and solutions rely primarily on specific suppliers for microprocessors and other component products, manufactured assemblies, operating systems, commercial software and other central components. NCR also utilizes contract manufacturers in order to complete manufacturing activities. There can be no assurances that any sudden impact to the availability or cost of these technologies or services would not have a material adverse effect on NCR's operations.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

14. ACCUMULATED OTHER COMPREHENSIVE INCOME

Changes in Accumulated Other Comprehensive Income (AOCI) by Component

The changes in AOCI for the years ended December 31 are as follows:

In millions	Currency Translation Adjustments	Changes in Employee Benefit Plans	Changes in Fair Value of Effective Cash Flow Hedges	Total
Balance at December 31, 2015	\$ (172)	\$ 23	\$ (1)	\$(150)
Other comprehensive (loss) income before reclassifications	(52)	(1)	16	(37)
Amounts reclassified from AOCI	—	(16)	(2)	(18)
Net current period other comprehensive (loss) income	(52)	(17)	14	(55)
Balance at December 31, 2016	\$ (224)	\$ 6	\$ 13	\$(205)
Other comprehensive (loss) income before reclassifications	41	(13)	(13)	15
Amounts reclassified from AOCI	—	(8)	(1)	(9)
Net current period other comprehensive (loss) income	41	(21)	(14)	6
Balance at December 31, 2017	\$ (183)	\$ (15)	\$ (1)	\$(199)
Impact of adoption of new accounting standard ⁽¹⁾	—	1	—	1
Other comprehensive (loss) income before reclassifications	(51)	6	11	(34)
Amounts reclassified from AOCI	—	(6)	(8)	(14)
Net current period other comprehensive (loss) income	(51)	—	3	(48)
Balance at December 31, 2018	\$ (234)	\$ (14)	\$ 2	\$(246)

⁽¹⁾ Refer to Note 1, “Basis of Presentation and Significant Accounting Policies” for further discussion of the adoption of accounting standard updates.

Reclassifications Out of AOCI

The reclassifications out of AOCI for the years ended December 31 are as follows:

	For the year ended December 31, 2018		
	Employee Benefit Plans		
	Amortization of Prior Actuarial Losses Service Recognized Benefit	Effective Cash Flow Hedges	Total
In millions			
Affected line in Consolidated Statement of Operations:			
Cost of products	\$—	\$ (7)	\$(7)
Cost of services	—(5)	—	(5)

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Selling, general and administrative expenses	—(3	)	—	(3	)
Research and development expenses	—(1	)	—	(1	)
Total before tax	\$—\$	(9	)	\$ (7	)
Tax expense				2	
Total reclassifications, net of tax				\$(14)	

105

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions	For the year ended December 31, 2017			
	Employee Benefit Plans			
	Actuarial Losses Recognized	Amortization of Prior Service Benefit	Effective Cash Flow Hedges	Total
Affected line in Consolidated Statement of Operations:				
Cost of products	\$—	\$ —	\$ (1)	\$(1)
Cost of services	(1)	(6)	—	(7)
Selling, general and administrative expenses	—	(4)	—	(4)
Research and development expenses	(1)	(1)	—	(2)
Total before tax	\$(2)	\$ (11)	\$ (1)	\$(14)
Tax expense				5
Total reclassifications, net of tax				\$(9)

In millions	For the year ended December 31, 2016			
	Employee Benefit Plans			
	Actuarial Losses Recognized	Amortization of Prior Service Benefit	Effective Cash Flow Hedges	Total
Affected line in Consolidated Statement of Operations:				
Cost of products	\$—	\$ —	\$ (3)	\$(3)
Cost of services	(1)	(10)	—	(11)
Selling, general and administrative expenses	—	(6)	—	(6)
Research and development expenses	(1)	(3)	—	(4)
Interest expense	—	—	2	2
Total before tax	\$(2)	\$ (19)	\$ (1)	\$(22)
Tax expense				4
Total reclassifications, net of tax				\$(18)

15. RESTRUCTURING PLAN

In the second quarter of 2018, we announced a hardware transformation initiative to streamline our manufacturing operations that will help us reduce our exposure to variable hardware demand as well as increase global utilization rates and optimize our supply chain network. As a part of this initiative, we plan to reduce the number of manufacturing plants and move the manufacturing operations at those plants to other existing NCR facilities and current third party suppliers.

As a result of the restructuring plan, the Company recorded a total charge of \$50 million in the year ended December 31, 2018. The Company expects that it may incur additional charges during 2019 related to this restructuring program. Such additional charges will be expensed as incurred. The restructuring program is scheduled to be completed by the end of 2019.

Severance and other employee related costs The Company recorded \$2 million of employee related costs in accordance with ASC 712, Employers' Accounting for Postemployment Benefits, when the severance liability was determined to be probable and reasonably estimable. The Company also recorded \$5 million of employee related costs in accordance with ASC 420, Exit or Disposal Cost Obligations. Of the severance and other employee related costs, \$5 million was included in cost of products and \$2 million was included in selling, general and administrative expenses in the Consolidated Statement of Operations. The Company made \$2 million of severance-related payments under ASC 712 in the year ended December 31, 2018. The Company made \$3 million in severance-related payments under ASC 420 in the year ended December 31, 2018.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Inventory related charges The Company recorded \$37 million in the year ended December 31, 2018 of inventory related charges for rationalizing its product portfolio and writing down inventory to be sold to third party suppliers to the lower cost or net realizable value. Inventory related charges are recorded within cost of products in the Consolidated Statement of Operations.

Other exit costs The Company recorded \$6 million in the year ended December 31, 2018 for costs primarily related to moving inventory and fixed assets from the plant locations that will be closed. Of these costs, \$3 million were included in cost of products and selling, general and administrative expenses, respectively, in the year ended December 31, 2018 in the Consolidated Statement of Operations.

The results by segment, as disclosed in Note 13, “Segment Information and Concentrations”, exclude the impact of these costs, which is consistent with the manner by which management assesses the performance and evaluates the results of each segment. The following table summarizes the costs recorded in accordance with ASC 420, Exit or Disposal Cost Obligations, and ASC 712, Employers’ Accounting for Postemployment Benefits, and the remaining liabilities as of December 31, 2018, which are included in the Consolidated Balance Sheet in other current liabilities.

In millions	2018
Employee Severance and Other Exit Costs	
Beginning balance as of January 1	\$—
Cost recognized during the period	13
Change in estimated payments	—
Utilization	(11)
Currency translation adjustments	—
Ending balance as of December 31	\$2

16. SUPPLEMENTAL FINANCIAL INFORMATION

The components of other income (expense), net are summarized as follows for the years ended December 31:

In millions	2018	2017	2016
Other income (expense), net			
Interest income	\$5	\$3	\$4
Foreign currency fluctuations and foreign exchange contracts	(26)	(26)	(40)
Employee benefit plans	45	(15)	(75)
Bank-related fees	(8)	(8)	(8)
Divestiture and liquidation losses	—	—	(6)
Total other income (expense), net	\$16	\$(46)	\$(125)

The components of accounts receivable are summarized as follows:

In millions	December 31, 2018	December 31, 2017
Accounts receivable		
Trade	\$ 1,364	\$ 1,270
Other	23	37
Accounts receivable, gross	1,387	1,307
Less: allowance for doubtful accounts	(31)	(37)
Total accounts receivable, net	\$ 1,356	\$ 1,270

The components of inventory are summarized as follows:

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions	December 31, 2018	December 31, 2017
Inventories		
Work in process and raw materials	\$ 237	\$ 185
Finished goods	214	190
Service parts	355	405
Total inventories	\$ 806	\$ 780

The components of property, plant and equipment are summarized as follows:

In millions	December 31, 2018	December 31, 2017
Property, plant and equipment		
Land and improvements	\$ 6	\$ 7
Buildings and improvements	273	278
Machinery and other equipment	650	633
Property, plant and equipment, gross	929	918
Less: accumulated depreciation	(570)	(577)
Total property, plant and equipment, net	\$ 359	\$ 341

17. GUARANTOR FINANCIAL STATEMENTS

The Company's 5.00% Notes, 4.625% Notes, 5.875% Notes and 6.375% Notes are guaranteed by the Company's subsidiary, NCR International, Inc. (Guarantor Subsidiary), which is 100% owned by the Company and has guaranteed fully and unconditionally the obligations to pay principal and interest for these senior unsecured notes. The guarantees are subject to release under certain circumstances as described below:

- the designation of the Guarantor Subsidiary as an unrestricted subsidiary under the indenture governing the notes;
- the release of the Guarantor Subsidiary from its guarantee under the Senior Secured Credit Facility;
- the release or discharge of the indebtedness that required the guarantee of the notes by the Guarantor Subsidiary;
- the permitted sale or other disposition of the Guarantor Subsidiary to a third party; and
- the Company's exercise of its legal defeasance option of its covenant defeasance option under the indenture governing the notes.

Refer to Note 6, "Debt Obligations" for additional information.

In connection with the previously completed exchange offers for the 5.00% Notes, 4.625% Notes, 5.875% Notes and 6.375% Notes, the Company is required to comply with Rule 3-10 of SEC Regulation S-X (Rule 3-10), and has therefore included the accompanying Consolidating Financial Statements in accordance with Rule 3-10(f) of SEC Regulation S-X.

The following supplemental information sets forth, on a consolidating basis, the statements of operations and comprehensive income (loss), the balance sheets and the statements of cash flows for the parent issuer of these senior unsecured notes, for the Guarantor Subsidiary and for the Company and all of its consolidated subsidiaries.

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Consolidating Statements of Operations and Comprehensive Income (Loss)

For the year ended December 31, 2018

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Product revenue	\$1,091	\$ 36	\$ 1,440	\$ (226)	\$ 2,341
Service revenue	2,117	33	1,914	—	4,064
Total revenue	3,208	69	3,354	(226)	6,405
Cost of products	1,000	32	1,182	(226)	1,988
Cost of services	1,443	13	1,286	—	2,742
Selling, general and administrative expenses	577	2	426	—	1,005
Research and development expenses	102	—	150	—	252
Asset impairment charges	210	—	17	—	227
Total operating expenses	3,332	47	3,061	(226)	6,214
Income (loss) from operations	(124)	22	293	—	191
Interest expense	(161)	—	(15)	8)	(168)
Other income (expense), net	7	6	11	(8)	16
Income (loss) from continuing operations before income taxes	(278)	28	289	—	39
Income tax expense (benefit)	(56)	72	57	—	73
Income (loss) from continuing operations before earnings in subsidiaries	(222)	(44)	232	—	(34)
Equity in earnings of consolidated subsidiaries	184	237	—	(421)	—
Income (loss) from continuing operations	(38)	193	232	(421)	(34)
Income (loss) from discontinued operations, net of tax	(50)	—	(2)	—	(52)
Net income (loss)	\$(88)	\$ 193	\$ 230	\$ (421)	\$ (86)
Net income (loss) attributable to noncontrolling interests	—	—	2	—	2
Net income (loss) attributable to NCR	\$(88)	\$ 193	\$ 228	\$ (421)	\$ (88)
Total comprehensive income (loss)	(136)	118	174	(292)	(136)
Less comprehensive income (loss) attributable to noncontrolling interests	—	—	—	—	—
Comprehensive income (loss) attributable to NCR common stockholders	\$(136)	\$ 118	\$ 174	\$ (292)	\$ (136)

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Consolidating Statements of Operations and Comprehensive Income (Loss)

For the year ended December 31, 2017

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Product revenue	\$1,329	\$ 91	\$ 1,454	\$ (295)	\$ 2,579
Service revenue	2,051	29	1,857	—	3,937
Total revenue	3,380	120	3,311	(295)	6,516
Cost of products	1,042	37	1,237	(295)	2,021
Cost of services	1,360	10	1,270	—	2,640
Selling, general and administrative expenses	490	3	430	—	923
Research and development expenses	184	—	57	—	241
Restructuring-related charges	—	—	—	—	—
Total operating expenses	3,076	50	2,994	(295)	5,825
Income (loss) from operations	304	70	317	—	691
Interest expense	(159)	—	(9)	5)	(163)
Other income (expense), net	(74)	1	32	(5)	(46)
Income (loss) from continuing operations before income taxes	71	71	340	—	482
Income tax expense (benefit)	113	107	22	—	242
Income (loss) from continuing operations before earnings in subsidiaries	(42)	(36)	318	—	240
Equity in earnings of consolidated subsidiaries	279	291	—	(570)	—
Income (loss) from continuing operations	237	255	318	(570)	240
Income (loss) from discontinued operations, net of tax	(5)	—	—	—	(5)
Net income (loss)	\$232	\$ 255	\$ 318	\$ (570)	\$ 235
Net income (loss) attributable to noncontrolling interests	—	—	3	—	3
Net income (loss) attributable to NCR	\$232	\$ 255	\$ 315	\$ (570)	\$ 232
Total comprehensive income (loss)	238	269	317	(585)	239
Less comprehensive income (loss) attributable to noncontrolling interests	—	—	1	—	1
Comprehensive income (loss) attributable to NCR common stockholders	\$238	\$ 269	\$ 316	\$ (585)	\$ 238

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Consolidating Statements of Operations and Comprehensive Income (Loss)

For the year ended December 31, 2016

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Product revenue	\$1,293	\$ 111	\$ 1,768	\$ (435)	\$ 2,737
Service revenue	1,962	36	1,808	—	3,806
Total revenue	3,255	147	3,576	(435)	6,543
Cost of products	1,028	50	1,456	(435)	2,099
Cost of services	1,359	12	1,255	—	2,626
Selling, general and administrative expenses	526	4	374	—	904
Research and development expenses	160	—	65	—	225
Restructuring-related charges	3	—	12	—	15
Total operating expenses	3,076	66	3,162	(435)	5,869
Income (loss) from operations	179	81	414	—	674
Interest expense	(165)	—	(10)	5)	(170)
Other income (expense), net	(42)	(23)	(55)	(5)	(125)
Income (loss) from continuing operations before income taxes	(28)	58	349	—	379
Income tax expense (benefit)	(20)	21	91	—	92
Income (loss) from continuing operations before earnings in subsidiaries	(8)	37	258	—	287
Equity in earnings of consolidated subsidiaries	291	304	—	(595)	—
Income (loss) from continuing operations	283	341	258	(595)	287
Income (loss) from discontinued operations, net of tax	(13)	—	—	—	(13)
Net income (loss)	\$270	\$ 341	\$ 258	\$ (595)	\$ 274
Net income (loss) attributable to noncontrolling interests	—	—	4	—	4
Net income (loss) attributable to NCR	\$270	\$ 341	\$ 254	\$ (595)	\$ 270
Total comprehensive income (loss)	215	277	195	(473)	214
Less comprehensive income (loss) attributable to noncontrolling interests	—	—	(1)	—	(1)
Comprehensive income (loss) attributable to NCR common stockholders	\$215	\$ 277	\$ 196	\$ (473)	\$ 215

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Consolidating Balance Sheet

December 31, 2018

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Assets					
Current assets					
Cash and cash equivalents	\$6	\$ 8	\$ 450	\$ —	\$ 464
Accounts receivable, net	37	10	1,309	—	1,356
Inventories	288	4	514	—	806
Due from affiliates	708	2,092	457	(3,257)	—
Other current assets	137	47	255	(42)	397
Total current assets	1,176	2,161	2,985	(3,299)	3,023
Property, plant and equipment, net	245	1	113	—	359
Goodwill	2,168	—	524	—	2,692
Intangibles, net	536	—	59	—	595
Prepaid pension cost	—	—	140	—	140
Deferred income taxes	317	—	149	(18)	448
Investments in subsidiaries	3,244	2,854	—	(6,098)	—
Due from affiliates	16	1	35	(52)	—
Other assets	453	4	47	—	504
Total assets	\$8,155	\$ 5,021	\$ 4,052	\$ (9,467)	\$ 7,761
Liabilities and stockholders' equity					
Current liabilities					
Short-term borrowings	\$85	\$ —	\$ 100	\$ —	\$ 185
Accounts payable	397	2	498	—	897
Payroll and benefits liabilities	141	—	97	—	238
Deferred service revenue and customer deposits	221	5	235	—	461
Due to affiliates	2,177	143	937	(3,257)	—
Other current liabilities	201	6	336	(42)	501
Total current liabilities	3,222	156	2,203	(3,299)	2,282
Long-term debt	2,978	—	2	—	2,980
Pension and indemnity plan liabilities	502	—	257	—	759
Postretirement and postemployment benefits liabilities	18	3	97	—	118
Income tax accruals	19	5	67	—	91
Due to affiliates	—	36	16	(52)	—
Other liabilities	162	24	91	(18)	259
Total liabilities	6,901	224	2,733	(3,369)	6,489
Redeemable noncontrolling interest	—	—	14	—	14
Series A convertible preferred stock	859	—	—	—	859
Stockholders' equity					
Total NCR stockholders' equity	395	4,797	1,301	(6,098)	395
Noncontrolling interests in subsidiaries	—	—	4	—	4
Total stockholders' equity	395	4,797	1,305	(6,098)	399

Total liabilities and stockholders' equity	\$8,155	\$ 5,021	\$ 4,052	\$ (9,467)	\$ 7,761
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112

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Consolidating Balance Sheet

December 31, 2017

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Assets					
Current assets					
Cash and cash equivalents	\$97	\$ 11	\$ 429	\$ —	\$ 537
Accounts receivable, net	62	12	1,196	—	1,270
Inventories	311	7	462	—	780
Due from affiliates	646	1,801	283	(2,730)	) —
Other current assets	78	39	162	(36)	) 243
Total current assets	1,194	1,870	2,532	(2,766)	) 2,830
Property, plant and equipment, net	207	—	134	—	341
Goodwill	2,228	—	513	—	2,741
Intangibles, net	503	—	75	—	578
Prepaid pension cost	—	—	118	—	118
Deferred income taxes	334	—	157	(31)	) 460
Investments in subsidiaries	3,008	2,942	—	(5,950)	) —
Due from affiliates	31	1	39	(71)	) —
Other assets	472	63	51	—	586
Total assets	\$7,977	\$ 4,876	\$ 3,619	\$ (8,818)	) \$ 7,654
Liabilities and stockholders' equity					
Current liabilities					
Short-term borrowings	\$52	\$ —	\$ —	\$ —	\$ 52
Accounts payable	382	—	380	—	762
Payroll and benefits liabilities	124	—	95	—	219
Deferred service revenue and customer deposits	216	6	236	—	458
Due to affiliates	1,884	130	716	(2,730)	) —
Other current liabilities	204	5	225	(36)	) 398
Total current liabilities	2,862	141	1,652	(2,766)	) 1,889
Long-term debt	2,937	—	2	—	2,939
Pension and indemnity plan liabilities	515	—	283	—	798
Postretirement and postemployment benefits liabilities	20	3	110	—	133
Income tax accruals	20	5	123	—	148
Due to affiliates	—	39	32	(71)	) —
Other liabilities	94	36	101	(31)	) 200
Total liabilities	6,448	224	2,303	(2,868)	) 6,107
Redeemable noncontrolling interest	—	—	15	—	15
Series A Convertible Preferred Stock	810	—	—	—	810
Stockholders' equity					
Total NCR stockholders' equity	719	4,652	1,298	(5,950)	) 719
Noncontrolling interests in subsidiaries	—	—	3	—	3
Total stockholders' equity	719	4,652	1,301	(5,950)	) 722

Total liabilities and stockholders' equity	\$7,977	\$ 4,876	\$ 3,619	\$ (8,818	)	\$ 7,654
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Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Consolidating Statement of Cash Flows

For the year ended December 31, 2018

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Elimination	Consolidated
Net cash provided by (used in) operating activities	\$353	\$ (138)	\$ 375	\$ (18)	\$ 572
Investing activities					
Expenditures for property, plant and equipment	(109)	—	(34)	—	(143)
Additions to capitalized software	(144)	—	(26)	—	(170)
Investments in equity affiliates	(14)	—	—	14	—
Proceeds from (payments of) intercompany notes	228	135	—	(363)	—
Acquisitions	(206)	—	—	—	(206)
Proceeds from the sale of PPE	1	—	2	—	3
Other investing activities, net	(4)	—	—	—	(4)
Net cash provided by (used in) investing activities	(248)	135	(58)	(349)	(520)
Financing activities					
Tax withholding payments on behalf of employees	(36)	—	—	—	(36)
Repurchases of Company common stock	(210)	—	—	—	(210)
Short term borrowings, net	(1)	—	—	—	(1)
Borrowings on term facility	—	—	—	—	—
Payments of term credit facilities	(51)	—	—	—	(51)
Proceeds from employee stock plans	20	—	—	—	20
Payments on revolving credit facilities	(1,755)	—	(478)	—	(2,233)
Borrowings on revolving credit facilities	1,875	—	578	—	2,453
Equity contribution	—	—	14	(14)	—
Dividends distribution to consolidated subsidiaries	—	—	(18)	18	—
Borrowings (repayments) of intercompany notes	—	—	(363)	363	—
Net cash provided by (used in) financing activities	(158)	—	(267)	367	(58)
Cash flows from discontinued operations					
Net cash used in discontinued operations operating activities	(36)	—	—	—	(36)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1)	—	(24)	—	(25)
Increase (decrease) in cash, cash equivalents and restricted cash	(90)	(3)	26	—	(67)
Cash, cash equivalents and restricted cash at beginning of period	97	11	435	—	543
Cash, cash equivalents and restricted cash at end of period	\$7	\$ 8	\$ 461	\$ —	\$ 476

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions

Reconciliation of cash, cash equivalents and restricted cash as shown
in the Consolidated Statements of Cash Flows

Cash and cash equivalents

Restricted cash included in Other assets

Total cash, cash equivalents and restricted cash

December 31, 2018

Parent	Guarantor	Non-Guarantor	Elimination	Consolidated
Issues	Subsidiary	Subsidiaries		

\$6	\$ 8	\$ 450	\$ —	\$ 464
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\$7	\$ 8	\$ 461	\$ —	\$ 476
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Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Consolidating Statement of Cash Flows

For the year ended December 31, 2017

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Elimination	Consolidated
Net cash provided by (used in) operating activities	\$459	\$ (180)	\$ 483	\$ (10)	\$ 752
Investing activities					
Expenditures for property, plant and equipment	(87)	—	(41)	—	(128)
Additions to capitalized software	(133)	—	(33)	—	(166)
Proceeds from (payments of) intercompany notes	230	180	2	(412)	—
Acquisitions	(8)	—	—	—	(8)
Proceeds from the sale of PPE	—	—	6	—	6
Proceeds from divestitures	3	—	—	—	3
Investments in equity affiliates	3	—	—	(3)	—
Other investing activities, net	(1)	—	4	—	3
Net cash provided by (used in) investing activities	7	180	(62)	(415)	(290)
Financing activities					
Short term borrowings, net	(5)	—	1	—	(4)
Payments on term credit facilities	(56)	—	(5)	—	(61)
Payments on revolving credit facilities	(1,700)	—	(240)	—	(1,940)
Borrowings on revolving credit facilities	1,700	—	240	—	1,940
Tax withholding payments on behalf of employees	(31)	—	—	—	(31)
Proceeds from employee stock plans	15	—	—	—	15
Other financing activities	(1)	—	(2)	—	(3)
Dividend distribution to consolidated subsidiaries	—	—	(10)	10	—
Repurchases of Company common stock	(350)	—	—	—	(350)
Equity contribution	—	—	(3)	3	—
Borrowings (repayments) of intercompany notes	—	(2)	(410)	412	—
Net cash provided by (used in) financing activities	(428)	(2)	(429)	425	(434)
Cash flows from discontinued operations					
Net cash used in discontinued operations operating activities	(8)	—	—	—	(8)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	—	1	15	—	16
Increase (decrease) in cash, cash equivalents and restricted cash	30	(1)	7	—	36
Cash, cash equivalents and restricted cash at beginning of period	67	12	428	—	507
Cash, cash equivalents and restricted cash at end of period	\$97	\$ 11	\$ 435	\$ —	\$ 543

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions

	December 31, 2017				
Reconciliation of cash, cash equivalents and restricted cash as shown in the Consolidated Statements of Cash Flows	Parent Issues	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Cash and cash equivalents	\$97	\$ 11	\$ 429	\$ —	\$ 537
Restricted cash included in Other assets	—	—	6	—	6
Total cash, cash equivalents and restricted cash	\$97	\$ 11	\$ 435	\$ —	\$ 543

117

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

Consolidating Statement of Cash Flows

For the year ended December 31, 2016

(in millions)	Parent Issuer	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Elimination	Consolidated
Net cash provided by (used in) operating activities	336	(160)	723	(3)	896
Investing activities					
Expenditures for property, plant and equipment	(33)	—	(40)	—	(73)
Additions to capitalized software	(114)	—	(40)	—	(154)
Proceeds from (payments of) intercompany notes	365	115	—	(480)	—
Proceeds from divestitures	22	—	25	—	47
Investments in equity affiliates	(9)	50	—	(41)	—
Other investing activities, net	(9)	—	—	—	(9)
Net cash provided by (used in) investing activities	222	165	(55)	(521)	(189)
Financing activities					
Short term borrowings, net	(4)	—	(4)	—	(8)
Payments on revolving credit facilities	(89)	—	(8)	—	(97)
Payments on revolving credit facilities	(1,151)	—	(280)	—	(1,431)
Borrowings on revolving credit facilities	1,051	—	280	—	1,331
Tax withholding payments on behalf of employees	(16)	—	—	—	(16)
Proceeds from employee stock plans	15	—	—	—	15
Debt issuance costs	(9)	—	—	—	(9)
Dividend distribution to consolidated subsidiaries	—	—	(53)	53	—
Other financing activities	—	—	(2)	—	(2)
Equity contribution	—	—	9	(9)	—
Borrowings (repayments) of intercompany notes	(16)	—	(464)	480	—
Tender offer share repurchase	(250)	—	—	—	(250)
Net cash provided by (used in) financing activities	(469)	—	(522)	524	(467)
Cash flows from discontinued operations					
Net cash used in discontinued operations operating activities	(39)	—	—	—	(39)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	—	(13)	(16)	—	(29)
Increase (decrease) in cash, cash equivalents and restricted cash	50	(8)	130	—	172
Cash, cash equivalents and restricted cash at beginning of period	17	20	298	—	335
Cash, cash equivalents and restricted cash at end of period	\$ 67	\$ 12	\$ 428	\$ —	\$ 507

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

In millions	December 31, 2016				
Reconciliation of cash, cash equivalents and restricted cash as shown in the Consolidated Statements of Cash Flows	Parent Issues	Guarantor Subsidiary	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Cash and cash equivalents	\$67	\$ 12	\$ 419	\$ —	\$ 498
Restricted cash included in Other assets	—	—	9	—	9
Total cash, cash equivalents and restricted cash	\$67	\$ 12	\$ 428	\$ —	\$ 507

Table of Contents

NCR Corporation

Notes to Consolidated Financial Statements-(Continued)

18. QUARTERLY INFORMATION (UNAUDITED)

In millions, except per share amounts	First	Second	Third	Fourth
2018				
Total revenue	\$1,517	\$1,537	\$1,550	\$1,801
Gross margin	420	403	410	442
Income from operations	109	(106)	125	63
Income from continuing operations (attributable to NCR)	55	(143)	85	(33)
Income (loss) from discontinued operations, net of tax	(35)	(2)	(1)	(14)
Net (loss) income attributable to NCR common stockholders	8	(157)	72	(60)
Income (loss) per share attributable to NCR common stockholders:				
Income (loss) per common share from continuing operations				
Basic	\$0.36	\$(1.31)	\$0.62	\$(0.39)
Diluted	\$0.35	\$(1.31)	\$0.57	\$(0.39)
Net (loss) income per common share:				
Basic	\$0.07	\$(1.33)	\$0.61	\$(0.51)
Diluted	\$0.06	\$(1.33)	\$0.56	\$(0.51)
2017				
Total revenue	\$1,478	\$1,593	\$1,663	\$1,782
Gross margin	412	461	472	510
Income from operations	115	175	199	202
Income from continuing operations (attributable to NCR)	57	97	118	(35)
(Loss) from discontinued operations, net of tax	—	5	—	(10)
Net income attributable to NCR common stockholders	(17)	90	106	(56)
Income per share attributable to NCR common stockholders:				
Income per common share from continuing operations				
Basic	\$(0.14)	\$0.70	\$0.87	\$(0.38)
Diluted	\$(0.14)	\$0.64	\$0.77	\$(0.38)
Net income per common share:				
Basic	\$(0.14)	\$0.74	\$0.87	\$(0.46)
Diluted	\$(0.14)	\$0.67	\$0.77	\$(0.46)

Operating income for the quarter ended December 31, 2018 was impacted by actuarial gains related to the remeasurement of our pension plan assets and liabilities. The actuarial gains included in pension expense recognized in the quarter ended December 31, 2018 increased net income attributable to NCR by \$44 million, basic earnings per share from continuing operations by \$0.37, and diluted earnings per share from continuing operations by \$0.37.

Operating income for the quarter ended December 31, 2017 was impacted by actuarial losses related to the remeasurement of our pension plan assets and liabilities. The actuarial losses included in pension expense recognized in the quarter ended December 31, 2017 decreased net income attributable to NCR by \$25 million, basic earnings per share from continuing operations by \$0.21, and diluted earnings per share from continuing operations by \$0.21.

Net income per share in each quarter is computed using the weighted-average number of shares outstanding during that quarter while net income per share for the full year is computed using the weighted-average number of shares outstanding during the year. Thus, the sum of the four quarters' net income per share will not necessarily equal the full-year net income per share.

Table of Contents

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

NCR has established disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) of the Securities Exchange Act of 1934 (the Exchange Act)) to ensure that information required to be disclosed by NCR in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by NCR in the reports that it files or submits under the Exchange Act is accumulated and communicated to NCR's management, including its Chief Executive and Chief Financial Officers, as appropriate to allow timely decisions regarding required disclosure. Based on their evaluation as of the end of the period covered by this Report, conducted under their supervision and with the participation of management, the Company's Chief Executive and Chief Financial Officers have concluded that NCR's disclosure controls and procedures are effective to meet such objectives and that NCR's disclosure controls and procedures adequately alert them on a timely basis to material information relating to the Company (including its consolidated subsidiaries) required to be included in NCR's Exchange Act filings.

Changes in Internal Control over Financial Reporting

Throughout 2018, in order to facilitate our adoption of the new revenue recognition accounting standard on January 1, 2018, we implemented internal controls to help ensure we properly evaluated our customer contracts, executed key system changes, and assessed the impact to our consolidated financial statements. There have been no other changes in our internal control over financial reporting that occurred during the last fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining effective internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act. The 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 due to, for example, the potential for human error or circumvention of controls, 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.

On December 6, 2018, the Company acquired JetPay Corporation (JetPay) in a business combination. The Company is currently integrating policies, processes, people, technology and operations for the combined company, and management has therefore excluded JetPay from its assessment of internal control over financial reporting as of December 31, 2018. JetPay is a wholly-owned subsidiary whose excluded aggregate total assets and total revenues represent approximately 1% and 0.1%, respectively, of the related consolidated financial statement amounts as of and for the year ended December 31, 2018.

The Company's management assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2018. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in the 2013 Internal Control-Integrated Framework. Based on our assessment, we determined that, as of December 31, 2018, the Company's internal control over financial reporting was effective based on those criteria.

Table of Contents

PricewaterhouseCoopers LLP, our independent registered public accounting firm, has audited the effectiveness of the Company's internal control over financial reporting as of December 31, 2018 as stated in their report which appears in Item 8 of this Report.

Item 9B. OTHER INFORMATION

None.

PART III

Item 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Except as set forth in the following paragraphs of this Item 10, the information required by this Item 10 will be set forth under the headings "Election of Directors," "Section 16(a) Beneficial Ownership Reporting Compliance," and "Committees of the Board" in the Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2018 year, and is incorporated herein by reference. The information required by this Item 10 regarding our executive officers is set forth under the heading "Executive Officers of the Registrant" in Part I of this Form 10-K and is incorporated herein by reference.

We have not materially changed the procedures by which stockholders may recommend nominees to the Company's Board of Directors.

We have a Code of Conduct that sets the standard for ethics and compliance for all of our directors and employees, including our chief executive officer, our chief financial officer and our chief accounting officer. Our Code of Conduct is available on the Corporate Governance page at our website at <http://www.ncr.com/company/corporate-governance/code-of-conduct> under the heading "Code of Conduct." We intend to disclose any amendments to or waivers of the Code of Conduct with respect to any director as well as our principal executive officer, principal financial officer, and principal accounting officer, on the Corporate Governance page of our website promptly following the date of such amendment or waiver.

Item 11. EXECUTIVE COMPENSATION

The information required by this Item 11 will be set forth under the headings "Executive Compensation - Compensation Discussion & Analysis," "Compensation and Human Resource Committee," and "Board Compensation and Human Resource Committee Report on Executive Compensation" in the Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2018 year, and is incorporated herein by reference.

Item 12. SECURITY OWNERSHIPS OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by this Item 12 will be set forth under the headings "NCR Stock Ownership" and "Equity Compensation Plan Information" in the Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2018 year, and is incorporated herein by reference.

Item 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS AND DIRECTOR INDEPENDENCE

The information required by this Item 13 will be set forth under the headings “Related Person Transactions” and “Corporate Governance” in the Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2018 year, and is incorporated herein by reference.

Item 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by this Item 14 will be set forth under the heading “Fees Paid to Independent Registered Public Accounting Firm” in the Definitive Proxy Statement for our 2019 Annual Meeting of Stockholders to be filed with the SEC within 120 days after the end of our fiscal 2018 year, and is incorporated herein by reference.

Table of Contents

PART IV

Item 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

(a)(1) Financial Statements: The following is an index of the consolidated financial statements of the Company and the Report of Independent Registered Public Accounting Firm filed as part of this Form 10-K:

	Page of Form 10-K
<u>Report of Independent Registered Public Accounting Firm</u>	<u>49</u>
<u>Consolidated Statements of Operations for the years ended December 31, 2018, 2017, and 2016</u>	<u>51</u>
<u>Consolidated Statements of Comprehensive Income Operations for the years ended December 31, 2018, 2017, and 2016</u>	<u>52</u>
<u>Consolidated Balance Sheets at December 31, 2018 and 2017</u>	<u>53</u>
<u>Consolidated Statements of Cash Flows for the years ended December 31, 2018, 2017, and 2016</u>	<u>54</u>
<u>Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2018, 2017, and 2016</u>	<u>55</u>
<u>Notes to Consolidated Financial Statements</u>	<u>56</u>

(2) Financial Statement Schedule: Financial Statement Schedule II—Valuation and Qualifying Accounts is included in this Form 10-K on page 130. All other schedules are not required under the related instructions or are not applicable.

(3) Exhibits: See Index of Exhibits below for a listing of all exhibits to this Form 10-K. The management contracts and compensatory plans or arrangements required to be filed as an exhibit to this Form 10-K are identified in the Index of Exhibits by an asterisk (*).

(b) The following is an index of all exhibits to this Form 10-K. Exhibits identified in parentheses in the index below, on file with the SEC, are incorporated herein by reference as exhibits hereto.

- 2.1 Separation and Distribution Agreement, dated as of August 27, 2007, between NCR Corporation and Teradata Corporation (Exhibit 10.1 to the Current Report on Form 8-K of Teradata Corporation dated September 6, 2007).
- 2.2 Agreement and Plan of Merger, dated as of October 19, 2018, among JetPay Corporation, NCR Corporation and Orwell Acquisition Corporation (Exhibit 2.1 to the Current Report on Form 8-K of NCR Corporation dated October 22, 2018).
- 3.1 Articles of Amendment and Restatement of NCR Corporation (Exhibit 3.1 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended June 30, 2016).
- 3.2 Bylaws of NCR Corporation, as amended and restated on February 20, 2018 (Exhibit 3.2 to the Current Report on Form 8-K of NCR Corporation dated February 23, 2018).
- 4.1 Common Stock Certificate of NCR Corporation (Exhibit 4.1 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 1999).
- 4.2 Indenture, dated September 17, 2012, among NCR Corporation, as issuer, NCR International Inc. and Radiant Systems Inc. as subsidiary guarantors and U.S. Bank National Association, as trustee (Exhibit 4.01 to the Current Report on Form 8-K of NCR Corporation dated September 17, 2012).

Indenture, dated December 18, 2012, among NCR Corporation, as issuer, NCR International Inc. and Radiant
4.3 Systems Inc. as subsidiary guarantors and U.S. Bank National Association, as trustee (Exhibit 4.01 to the Current
Report on Form 8-K of NCR Corporation dated December 18, 2012).

Table of Contents

- 4.4 Indenture, dated December 19, 2013, between NCR Escrow Corp. and U.S. Bank National Association relating to the \$400 million aggregate principal amount of 5.875% senior notes due 2021 (the “5.875% Notes”) (Exhibit 4.1 to the Current Report on Form 8-K of NCR Corporation dated December 19, 2013 (the “December 19, 2013 Form 8-K”)).
- 4.4.1 First Supplemental Indenture relating to the 5.875% Notes, dated January 10, 2014, among NCR Corporation, NCR International, Inc. and U.S. Bank National Association, as trustee (Exhibit 4.1 to the Current Report of NCR Corporation dated January 10, 2014 (the “January 10, 2014 Form 8-K”)).
- 4.5 Indenture, dated December 19, 2013, between NCR Escrow Corp. and U.S. Bank National Association relating to the \$700 million aggregate principal amount of 6.375% senior notes due 2023 (the “6.375% Notes”) (Exhibit 4.2 to the December 19, 2013 Form 8-K).
- 4.5.1 First Supplemental Indenture relating to the 6.375% Notes, dated January 10, 2014, among NCR Corporation, NCR International, Inc. and U.S. Bank National Association, as trustee (Exhibit 4.2 to the January 10, 2014 Form 8-K).
- 10.1 Separation and Distribution Agreement, dated as of February 1, 1996, and amended and restated as of March 29, 1996, by and among NCR Corporation, AT&T Corp. and Lucent Technologies Inc. (Exhibit 10.1 to Amendment No. 3 to the Lucent Technologies Inc. Registration Statement on Form S-1 (No. 333-00703) (the “Lucent Registration Statement Amendment No. 3”)).
- 10.2 Employee Benefits Agreement, dated as of November 20, 1996, by and between AT&T Corp. and NCR Corporation (Exhibit 10.2 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 1996 (the “1996 Annual Report”)).
- 10.3 Patent License Agreement, effective as of March 29, 1996, by and among AT&T Corp., NCR Corporation, and Lucent Technologies Inc. (Exhibit 10.7 to Amendment No. 4 to the Lucent Technologies Inc. Registration Statement on Form S-1 (No. 333-0073) (the “Lucent Registration Statement Amendment No. 4”)).
- 10.4 Amended and Restated Technology License Agreement, effective as of March 29, 1996, by and among AT&T Corp., NCR Corporation, and Lucent Technologies Inc. (Exhibit 10.8 to the Lucent Registration Statement Amendment No. 4).
- 10.5 Tax Sharing Agreement, dated as of February 1, 1996, and amended and restated as of March 29, 1996, by and among AT&T Corp., NCR Corporation, and Lucent Technologies Inc. (Exhibit 10.6 to the Lucent Registration Statement Amendment No. 3).
- 10.6 Tax Sharing Agreement, dated as of September 21, 2007, between NCR Corporation and Teradata Corporation (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated September 21, 2007).
- 10.7 NCR Management Stock Plan (Exhibit 10.8 to the 1996 Annual Report). *
- 10.7.1 First Amendment to the NCR Management Stock Plan dated April 30, 2003 (Exhibit 10.4 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2003). *
- 10.7.2 Amendment to NCR Management Stock Plan effective as of December 31, 2008 (Exhibit 10.17.2 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 2008 (the “2008 Annual Report”)). *

10.7.3 Form of Stock Option Agreement under the NCR Management Stock Plan (Exhibit 10.6.3 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 2005 (the “2005 Annual Report”)). *

10.7.4 Form of Restricted Stock Agreement under the NCR Management Stock Plan (Exhibit 10.6.4 to the 2005 Annual Report). *

Table of Contents

- 10.8 NCR Corporation 2011 Amended and Restated Stock Incentive Plan (formerly the NCR 2006 Stock Incentive Plan, as amended and restated effective as of December 31, 2008) (the “2011 Stock Incentive Plan”) (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated April 27, 2011). *
- 10.8.1 Form of 2009 Stock Option Agreement under the NCR Corporation 2011 Stock Incentive Plan (Exhibit 10.5 to the Current Report on Form 8-K of NCR Corporation dated December 12, 2008). *
- 10.8.2 Form of 2010 Stock Option Agreement under the 2011 Stock Incentive Plan (Exhibit 10.2 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2010 (the “First Quarter 2010 Quarterly Report”)). *
- 10.8.3 Form of 2011 Stock Option Agreement under the 2011 Stock Incentive Plan (Exhibit 10.1 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2011). *
- 10.9 Amended and Restated NCR Management Incentive Plan (Exhibit 10.2 to the Current Report on Form 8-K of NCR Corporation dated April 27, 2011). *
- 10.10 NCR Director Compensation Program effective April 21, 2009 (the “2009 NCR Director Compensation Program”) (Exhibit 10.7 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2009 (the “First Quarter 2009 Form 10-Q”)). *
- 10.10.1 2009 Director Option Grant Statement under the 2009 NCR Director Compensation Program (Exhibit 10.8 to the First Quarter 2009 Form 10-Q). *
- 10.10.2 2009 Director Restricted Stock Unit Grant Statement under the 2009 NCR Director Compensation Program (Exhibit 10.9 to the First Quarter 2009 Form 10-Q). *
- 10.11 Amended and Restated NCR Change in Control Severance Plan effective December 31, 2008 (Exhibit 10.24.2 to the 2008 Annual Report). *
- 10.11.1 First Amendment to the Amended and Restated NCR Change in Control Severance Plan (Exhibit 10.6 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended September 30, 2011). *
- 10.11.2 Second Amendment to the Amended and Restated NCR Change in Control Severance Plan (Exhibit 10.11.2 to the 2017 Annual Report). *
- 10.12 Employment Agreement with William Nuti, dated July 29, 2005 (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated July 27, 2005). *
- 10.12.1 Letter Agreement, dated July 26, 2006, with William Nuti (Exhibit 10.4 to the Current Report on Form 8-K of NCR Corporation dated July 25, 2006). *
- 10.12.2 Second Amendment, effective as of December 12, 2008, to Letter Agreement with William Nuti dated July 29, 2005, as amended July 26, 2006 (Exhibit 10.30.2 to the 2008 Annual Report). *
- 10.12.3 Letter Agreement, dated March 11, 2015, between NCR Corporation and William Nuti (Exhibit 10.5 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended March 31, 2015 (the “First Quarter

2015 Quarterly Report’’)). *

10.13 NCR Director Compensation Program Effective April 27, 2010 (Exhibit 10.1 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended June 30, 2010 (the “Second Quarter 2010 Quarterly Report’’)). *

10.13.1 Form of 2010 Director Option Grant Statement (Exhibit 10.2 to the Second Quarter 2010 Quarterly Report). *

10.13.2 Form of 2010 Director Restricted Stock Unit Grant Statement (Exhibit 10.3 to the Second Quarter 2010 Quarterly Report). *

Table of Contents

- 10.14 Letter Agreement with Robert Fishman dated March 17, 2010 (Exhibit 10.7 to the First Quarter 2010 Quarterly Report). *
- 10.15 NCR Corporation 2011 Economic Profit Plan (Exhibit 10.3 to the Current Report on Form 8-K of NCR Corporation dated April 27, 2011). *
- 10.15.1 First Amendment to NCR Corporation 2011 Economic Profit Plan (Exhibit 10.29.1 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 2011). *
- 10.15.2 Second Amendment to NCR Corporation 2011 Economic Profit Plan, dated January 25, 2012 (Exhibit 10.1 to the First Quarter 2012 Quarterly Report).
- 10.15.3 Third Amendment to NCR Corporation 2011 Economic Profit Plan (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated October 1, 2013). *
- 10.15.4 Fourth Amendment to NCR Corporation 2011 Economic Profit Plan (Exhibit 10.18.4 to the NCR Corporation Annual Report on Form 10-K for the year ended December 31, 2014 (the “2014 Annual Report”)). *
- 10.15.5 Amended and Restated NCR Corporation Economic Profit Plan (Exhibit 10.2 to the NCR Corporation Quarterly Report on Form 10-Q for the quarter ended June 30, 2015 (the “Second Quarter 2015 Quarterly Report”)). *
- 10.16 Equity Subscription Agreement, dated July 26, 2011, among NCR Corporation, Scopus Industrial S.A., Scopus Tecnologia Ltda. and NCR Brasil - Indústria de Equipamentos Para Automação Ltda., including Schedule I - The form of Shareholders' Agreement (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated July 26, 2011).
- 10.17 NCR Corporation 2013 Stock Incentive Plan (the “2013 Stock Incentive Plan”) (Appendix A to the NCR Corporation Proxy Statement on Schedule 14A for the NCR Corporation 2013 Annual Meeting of Stockholders). *
- 10.17.1 Form of 2015 Performance Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan (Exhibit 10.1 to the First Quarter 2015 Quarterly Report). *
- 10.17.2 Form of 2015 Time Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan (Exhibit 10.2 to the First Quarter 2015 Quarterly Report). *
- 10.17.3 Form of 2015 Single-Metric Performance-Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan (Exhibit 10.3 to the First Quarter 2015 Quarterly Report). *
- 10.17.4 Form of 2016 Time Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2016 (the “First Quarter 2016 Quarterly Report”)). *
- 10.17.5 Form of 2016 Performance Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan (Exhibit 10.2 to the First Quarter 2016 Quarterly Report). *
- 10.17.6

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Form of 2016 Single-Metric Performance Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan (Exhibit 10.3 to the First Quarter 2016 Quarterly Report). *

10.17.7 Form of Vision 2020 Award (for Awardees Other than the Chief Executive Officer): 2016 Price-Contingent Restricted Stock Unit Agreement - \$35 Price Target - under the 2013 Stock Incentive Plan (Exhibit 10.5 to the First Quarter 2016 Quarterly Report). *

10.17.8 Form of Vision 2020 Award (for Awardees Other than the Chief Executive Officer): 2016 Price-Contingent Restricted Stock Unit Agreement - \$40 Price Target - under the 2013 Stock Incentive Plan (Exhibit 10.6 to the First Quarter 2016 Quarterly Report). *

10.18 Agreement between NCR and the Trustees of the NCR Pension Plan (UK), dated November 14, 2013 (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 14, 2013).

126

Table of Contents

- 10.19 Receivables Financing Agreement, dated as of November 21, 2014, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, Victory Receivables Corporation and the other lender parties from time to time party thereto (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 21, 2014 (the “November 21, 2014 Form 8-K”)).
- 10.19.1 First Amendment to Receivables Financing Agreement, dated as of November 21, 2016, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, Victory Receivables Corporation and the other lender parties from time to time party thereto (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 23, 2016).
- 10.19.2 Second Amendment to the Receivables Financing Agreement, dated as of September 29, 2017, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, and Victory Receivables Corporation, as lenders.
- 10.19.3 Third Amendment to Receivables Financing Agreement, dated as of November 15, 2018, by and among NCR Receivables LLC, as borrower, NCR Corporation, as servicer, PNC Bank, National Association, as administrative agent, and PNC Bank, National Association, MUFG Bank, Ltd. (f/k/a The Bank of Tokyo Mitsubishi UFJ, Ltd., New York Branch) and Victory Receivables Corporation, as lenders (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 20, 2018).
- 10.20 Purchase and Sale Agreement, dated as of November 21, 2014, among NCR Receivables LLC, as buyer, and NCR Corporation and the other originator parties from time to time party thereto (Exhibit 10.2 to the November 21, 2014 Form 8-K).
- 10.21 Amended and Restated NCR Executive Severance Plan (Exhibit 10.1 to the Second Quarter 2015 Quarterly Report). *
- 10.21.1 First Amendment to the Amended and Restated NCR Executive Severance Plan (Exhibit 10.21.1 to the 2017 Annual Report). *
- 10.22 Employment Letter of Frederick Marquardt dated April 4, 2014 (as amended May 1, 2014). (Exhibit 10.40 to the 2014 Annual Report). *
- 10.23 Employment Contract, dated June 23, 2014, between NCR GmbH and Michael Bayer (Exhibit 10.41 to the 2014 Annual Report). *
- 10.23.1 Letter regarding additional terms of employment of Michael Bayer, dated June 23, 2014 (Exhibit 10.41.1 to the 2014 Annual Report). *
- 10.23.2 Employment Transfer Letter (revised) of Michael Bayer, dated July 30, 2015 (Exhibit 10.4 to the Second Quarter 2015 Quarterly Report). *
- 10.24

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NCR Director Compensation Program effective April 23, 2013, as amended effective February 24, 2014 (the “2013 NCR Director Compensation Program”) (Exhibit 10.42 to the 2014 Annual Report). *

10.24.1 2014 Director Restricted Stock Unit Grant Statement under the 2013 NCR Director Compensation Program (Exhibit 10.42.1 to the 2014 Annual Report). *

10.24.2 2015 Director Restricted Stock Unit Grant Statement under the 2013 NCR Director Compensation Program (Exhibit 10.3 to the Second Quarter 2015 Quarterly Report). *

10.24.3 2016 Director Restricted Stock Unit Grant Statement under the 2013 NCR Director Compensation Program (Exhibit 10.2 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended June 30, 2016 (the “Second Quarter 2016 Quarterly Report”)). *

Table of Contents

- 10.25 Investment Agreement dated as of November 11, 2015, by and between NCR Corporation and the affiliates of Blackstone Capital Partners VI, L.P. and Blackstone Tactical Opportunities L.L.C. named therein (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated November 11, 2015).
- 10.26 Registration Rights Agreement, dated as of December 4, 2015, by and between NCR Corporation and the affiliates of Blackstone Capital Partners VI, L.P. and Blackstone Tactical Opportunities L.L.C. named therein (Exhibit 10.1 to the December 2, 2015 Form 8-K).
- 10.27 NCR Employee Stock Purchase Plan, as amended and restated effective January 1, 2017 (Appendix A to the NCR Corporation Proxy Statement on Schedule 14A for the NCR Corporation 2016 Annual Meeting of Stockholders). *
- 10.28 Credit Agreement, dated as of August 22, 2011, as amended and restated as of July 25, 2013, as further amended and restated as of March 31, 2016, by and among NCR Corporation, the Foreign Borrowers party thereto, the Lenders party thereto and JPMorgan Chase Bank, N.A., as Administrative Agent (Exhibit 10.1 to the Current Report on Form 8-K of NCR Corporation dated April 4, 2016 (the “April 4, 2016 Form 8-K”)).
- 10.28.1 Amended and Restated Guarantee and Collateral Agreement, dated as of August 22, 2011, as amended and restated as of January 6, 2014, as further amended and restated as of March 31, 2016, by and among NCR Corporation, the Foreign Borrowers party thereto, the subsidiaries of NCR Corporation identified therein and JPMorgan Chase Bank, N.A., as Administrative Agent (Exhibit 10.2 to the April 4, 2016 Form 8-K).
- 10.28.2 Annex A to Credit Agreement dated as of August 22, 2011, as amended and restated as of July 25, 2013, as further amended and restated as of March 31, 2016, among NCR Corporation, the Foreign Borrowers party thereto, the Lenders party thereto and JPMorgan Chase Bank, N.A. (Exhibit 10.1 to the Second Quarter 2016 Quarterly Report).
- 10.29 Employment Contract, dated September 15, 2016, between NCR Corporation and Mark D. Benjamin (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended September 30, 2016). *
- 10.30 Underwriting Agreement, dated March 13, 2017, among NCR Corporation, Merrill Lynch, Pierce, Fenner & Smith Incorporated, J.P. Morgan Securities LLC and the selling stockholders party thereto (Exhibit 1.1 to the Current Report on Form 8-K of NCR Corporation dated March 10, 2017).
- 10.31 Second Amended and Restated NCR Management Incentive Plan (Appendix A to the NCR Corporation Proxy Statement on Schedule 14A for the NCR Corporation 2017 Annual Meeting of Stockholders (the “2017 Proxy Statement”)). *
- 10.32 Stock Repurchase Agreement, dated as of March 10, 2017, by and between NCR Corporation, Blackstone BCP VI SBS ESC Holdco L.P., Blackstone NCR Holdco L.P., BTO NCR Holdings - ESC L.P., and BTO NCR Holdings L.P. (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2017 (the “First Quarter 2017 Quarterly Report”)).
- 10.33 Waiver and Amendment of Investment Agreement, dated as of March 13 2017, by and between NCR Corporation, Blackstone BCP VI SBS ESC Holdco L.P., Blackstone NCR Holdco L.P., BTO NCR Holdings - ESC L.P. and BTG NCR Holdings L.P. (Exhibit 10.2 to the First Quarter 2017 Quarterly Report).
- 10.34

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NCR Corporation 2017 Stock Incentive Plan (the “2017 Stock Incentive Plan”) (Appendix B to the 2017 Proxy Statement). *

10.34.1 Form of 2017 Performance-Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.3 to the First Quarter 2017 Quarterly Report). *

10.34.2 Form of 2017 Performance-Vesting Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.4 to the First Quarter 2017 Quarterly Report). *

10.34.3 Form of 2017 Time-Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.5 to the First Quarter 2017 Quarterly Report). *

10.34.4 Form of 2017 Single-Metric Performance-Based Restricted Stock Unit Award Agreement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.6 to the First Quarter 2017 Quarterly Report). *

Table of Contents

- 10.34.5 Form of 2017 Director Restricted Stock Unit Grant Statement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended June 30, 2017 (the "Second Quarter 2017 Quarterly Report")). *
- 10.34.6 Form of 2017 Stock Option Award Agreement under the 2013 Stock Incentive Plan and 2017 Stock Incentive Plan (Exhibit 10.2 to the Second Quarter 2017 Quarterly Report). *
- 10.34.7 Form of 2018 Director Restricted Stock Unit Grant Statement under the 2017 Stock Incentive Plan (Exhibit 10.3 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended June 30, 2018 (the "Second Quarter 2018 Quarterly Report")). *
- 10.34.8 Form of 2018 Stock Option Award Agreement under the NCR Corporation 2017 Stock Incentive Plan (the "2017 Stock Incentive Plan") (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2018). *
- 10.34.9 Form of 2018 Time-Based Restricted Stock Unit Award Agreement under the 2017 Stock Incentive Plan (Exhibit 10.2 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2018). *
- 10.34.10 Form of 2018 Performance-Vesting Restricted Stock Unit Award Agreement under the 2017 Stock Incentive Plan (Exhibit 10.3 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2018). *
- 10.34.11 Form of 2018 Performance-Based Restricted Stock Unit Award Agreement under the 2017 Stock Incentive Plan (Exhibit 10.4 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended March 31, 2018). *
- 10.35 NCR Director Compensation Program effective May 1, 2017 (Exhibit 10.1 to the Second Quarter 2017 Quarterly Report). *
- 10.36 Master Manufacturing Agreement, dated April 23, 2018, by and between Jabil Inc. and NCR Corporation. (Exhibit 10.1 to the Second Quarter 2018 Quarterly Report).
- 10.37 Master Hardware Supply Agreement, dated June 28, 2018, between Universal Global Scientific Industrial Co., Ltd. and NCR Corporation. (Exhibit 10.2 to the Second Quarter 2018 Quarterly Report).
- 10.38 Employment Agreement, dated April 27, 2018, between Michael Hayford and NCR Corporation. (Exhibit 10.4 to the Second Quarter 2018 Quarterly Report). *
- 10.39 Employment Agreement, dated April 27, 2018, between Frank Martire and NCR Corporation. (Exhibit 10.5 to the Second Quarter 2018 Quarterly Report). *
- 10.40 Letter Agreement, dated April 30, 2018 between William R. Nuti and NCR Corporation. (Exhibit 10.6 to the Second Quarter 2018 Quarterly Report). *
- 10.41 Letter Agreement, dated May 2, 2018, between Paul E. Langenbahn and NCR Corporation. (Exhibit 10.7 to the Second Quarter 2018 Quarterly Report). *

- 10.42 Letter Agreement, dated March 19, 2018, between Mark D. Benjamin and NCR Corporation. (Exhibit 10.8 to the Second Quarter 2018 Quarterly Report). *
- 10.43 Employment Agreement, dated July 18, 2018, between Owen Sullivan and NCR Corporation. (Exhibit 10.1 to the Quarterly Report on Form 10-Q of NCR Corporation for the quarter ended September 30, 2018 (the "Third Quarter 2018 Quarterly Report")). *
- 10.44 Amendment, effective as of July 26, 2018, to Employment Agreement, dated May 2, 2018, between Paul Langenbahn and NCR Corporation. (Exhibit 10.2 to the Third Quarter 2018 Quarterly Report). *
- 10.45 Employment Agreement, dated August 27, 2018, between Andre J. Fernandez and NCR Corporation. (Exhibit 10.3 to the Third Quarter 2018 Quarterly Report). *
- 21 Subsidiaries of NCR Corporation.
- 23.1 Consent of Independent Registered Public Accounting Firm.

Table of Contents

31.1 Certification pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934.

31.2 Certification pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934.

32 Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

99.1 Tax Opinion of Wachtell, Lipton, Rosen & Katz in connection with the Spin off of Teradata, dated August 27, 2007 (Exhibit 99.2 to the Current Report on Form 8-K of NCR Corporation dated September 30, 2007).

101 Financials in XBRL Format.

* Management contracts or compensatory plans/arrangements

130

Table of Contents

Item 16. FORM 10-K SUMMARY

None.

NCR Corporation

SCHEDULE II--VALUATION AND QUALIFYING ACCOUNTS

(In millions)

Column A	Column B	Column C		Column D	Column E
Description	Balance at Beginning of Period	Additions Charged to Costs & Expenses	Charged to Other Accounts	Deductions	Balance at End of Period
Year Ended December 31, 2018					
Allowance for doubtful accounts	\$37	\$14	\$—	\$20	\$31
Deferred tax asset valuation allowance	\$415	\$100	\$—	\$30	\$485
Year Ended December 31, 2017					
Allowance for doubtful accounts	\$41	\$10	\$—	\$14	\$37
Deferred tax asset valuation allowance	\$445	\$—	\$—	\$30	\$415
Year Ended December 31, 2016					
Allowance for doubtful accounts	\$47	\$9	\$—	\$15	\$41
Deferred tax asset valuation allowance	\$346	\$—	\$99	\$—	\$445

Table of Contents

SIGNATURES

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

NCR CORPORATION

Date: February 28, 2019 By: /s/ Andre J. Fernandez
 Andre J. Fernandez
 Executive Vice President and Chief Financial Officer

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

Signature	Title
/s/ Frank R. Martire Frank R. Martire	Executive Chairman
/s/ Michael D. Hayford Michael D. Hayford	President and Chief Executive Officer, and Director
/s/ Andre J. Fernandez Andre J. Fernandez	Executive Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)
/s/ Gregory R. Blank Gregory R. Blank	Director
/s/ Chinh E. Chu Chinh E. Chu	Director
/s/ Richard L. Clemmer Richard L. Clemmer	Director
/s/ Robert P. DeRodes Robert P. DeRodes	Director
/s/ Deborah A. Farrington Deborah A. Farrington	Director
/s/ Kurt P. Kuehn Kurt P. Kuehn	Director
/s/ Linda Fayne Levinson Linda Fayne Levinson	Director
/s/ Matthew Thompson Matthew Thompson	Director

Date: February 28, 2019

132