

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, 2019

Commission file number: 1-7945

deluxe

DELUXE CORPORATION

(Exact name of registrant as specified in its charter)

MN

(State or other jurisdiction of incorporation or organization)

3680 Victoria St. N. Shoreview MN

(Address of principal executive offices)

41-0216800

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

55126-2966

(Zip Code)

Registrant's telephone number, including area code: **(651) 483-7111**

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

Title of each class	Trading symbol(s)	Name of each exchange on which registered
Common Stock, par value \$1.00 per share	DLX	NYSE

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

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

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

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

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

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

Large Accelerated Filer	<input checked="" type="checkbox"/>	Accelerated Filer	<input type="checkbox"/>
Non-accelerated Filer	<input type="checkbox"/>	Smaller Reporting Company	<input type="checkbox"/>
		Emerging Growth Company	<input type="checkbox"/>

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

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

The aggregate market value of the voting stock held by non-affiliates of the registrant is \$1,736,275,030 based on the last sales price of the registrant's common stock on the New York Stock Exchange on June 28, 2019. The number of outstanding shares of the registrant's common stock as of February 11, 2020 was 42,191,465.

Documents Incorporated by Reference: Portions of our definitive proxy statement to be filed within 120 days after our fiscal year-end are incorporated by reference in Part III.

DELUXE CORPORATION
FORM 10-K
FOR THE YEAR ENDED DECEMBER 31, 2019

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ITEM 1. BUSINESS

COMPANY BACKGROUND

Over 100 years ago, Deluxe Corporation began providing payment solutions. Our longevity is a testament to our innovation and our ability to evolve with our customers. Over the past several years, we have transformed from a check printing company to an integral part of our customers' businesses. We are a Trusted Business Technology™ company that helps enterprises, small businesses and financial institutions deepen customer relationships through technology-enabled solutions, including marketing services and data analytics, treasury management solutions, website development and hosting, promotional products, electronic checks and deposits ("ePayments"), payroll services and fraud solutions, as well as customized checks and forms. We are also a leading provider of checks and accessories sold directly to consumers. Over the past 2 years, we have provided products and services to over 4,000 financial institutions, approximately 4.5 million other businesses and over 4.0 million consumers. We operate primarily in the U.S., but we also sell our products and services in Canada, Australia and portions of Europe and South America.

As of December 31, 2019, we operated 3 reportable business segments organized by customer type:

- **Small Business Services** – This segment primarily serves small businesses and promotes and sells its products and services via internet advertising, direct response mail, partner referrals, networks of Safeguard® distributors and independent dealers, a direct sales force and an outbound telemarketing group.
- **Financial Services** – This segment primarily serves financial institutions, including banks, credit unions and financial services companies, and promotes and sells its products and services primarily through a direct sales force.
- **Direct Checks** – This segment is a leading direct-to-consumer check supplier, selling its products and services directly to consumers via direct marketing, utilizing search engine marketing and optimization strategies and print advertising.

Deluxe Corporation was founded in 1915 and was incorporated under the laws of the State of Minnesota in 1920. Our principal corporate offices are located at 3680 Victoria Street North, Shoreview, Minnesota 55126-2966. Our main telephone number is (651) 483-7111 and our web address is www.deluxe.com.

PRODUCTS AND SERVICES

Our product and service offerings are comprised of the following:

Marketing solutions and other services (MOS) – We offer products and services designed to meet our customers' sales and marketing needs, as well as various other service offerings. Our MOS offerings generally consist of the following:

- **Small business marketing solutions** – Our marketing products utilize digital printing and web-to-print solutions to provide printed marketing materials and promotional solutions, such as postcards, brochures, retail packaging supplies, apparel, greeting cards and business cards.
- **Treasury management solutions** – These solutions include remittance and lockbox processing, remote deposit capture, receivables management, payment processing and paperless treasury management, as well as software, hardware and digital imaging solutions.
- **Web services** – These service offerings include web hosting and domain name services, logo and web design, payroll services, email marketing, search engine marketing and optimization and business incorporation and organization services.
- **Data-driven marketing solutions** – These offerings include outsourced marketing campaign targeting and execution and marketing analytics solutions that help our customers grow revenue through strategic targeting, lead optimization, retention and cross-selling services.
- **Fraud, security, risk management and operational services** – These service offerings include fraud protection and security services, ePayments and digital engagement solutions, including loyalty and rewards programs and financial management tools.

Checks – We are one of the largest providers of personal and business checks in the U.S.

Forms, accessories and other products – We provide printed business forms, including deposit tickets, billing forms, work orders, job proposals, purchase orders, invoices and personnel forms, as well as computer forms compatible with accounting software packages commonly used by small businesses. We also offer other customized products, including envelopes, office supplies, ink stamps, labels, deposit tickets, check registers and checkbook covers.

Revenue by product and service category, as a percentage of consolidated revenue, for the years ended December 31 was as follows:

	2019	2018	2017	2016	2015
Marketing solutions and other services:					
Small business marketing solutions	14.0%	14.6%	13.3%	13.1%	11.8%
Treasury management solutions	9.6%	7.4%	5.5%	5.0%	4.2%
Web services	8.3%	8.1%	6.7%	6.3%	6.3%
Data-driven marketing solutions	7.9%	7.4%	7.7%	2.7%	1.2%
Fraud, security, risk management and operational services	4.3%	4.5%	5.2%	6.3%	6.5%
Total MOS	44.1%	42.0%	38.4%	33.4%	30.0%
Checks	39.0%	40.6%	43.3%	46.8%	49.3%
Forms, accessories and other products	16.9%	17.4%	18.3%	19.8%	20.7%
Total revenue	100.0%	100.0%	100.0%	100.0%	100.0%

Additional information concerning our revenue by segment appears under the caption "Note 19: Business segment information" of the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

"ONE DELUXE" STRATEGY

Throughout the past several years, as the use of checks and forms continued to decline, we focused on opportunities to increase revenue and operating income and to diversify our revenue streams and customer base. These opportunities included new product and service offerings, brand awareness and positioning initiatives, investing in technology for our service offerings, enhancing our information technology capabilities and infrastructure, improving customer segmentation, extending the reach of our sales channels and reducing costs. In addition, we completed various acquisitions that extended the range of products and services we offer to our customers. Information about our acquisitions can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

We have now moved beyond product and service diversification and have transformed into a Trusted Business Technology™ company. Our One Deluxe growth strategy focuses on profitable organic growth, supplemented by acquisitions, rather than being dependent on acquisitions for growth. This shift in our strategic focus requires us to fundamentally change our go-to-market strategy, operating model and organizational design. We expect that fully integrating past acquisitions and consolidating and standardizing our technology platforms will enable us to operate as one Deluxe. Previously, we operated as a "company of companies," and we are now transforming into a "company of products." We plan to:

- **leverage our existing core competencies and assets**, including our broad customer base, our highly respected and trusted brand, our efficient cost structure and our extensive catalog of products and services, to accelerate organic revenue growth;
- **fundamentally change how we go to market and operate**, selling all of our products and services to any customer and unifying our existing brands;
- **compete in 4 primary areas**: Payments, Cloud Solutions, Promotional Solutions and Checks; and
- **continue our commitment to the responsible management of shareholder assets**, delivering ongoing efficiency savings and organic revenue growth while continuing to pay a dividend.

In support of our strategy, we are investing significant resources to build out our technology platforms, including sales technology that enables a single view of our customers, thereby providing for deeper cross-sell opportunities. We implemented a human capital management system in January 2020, and we are also investing in our financial tools, including an enterprise resource planning system and a financial planning and analysis system. Strategically, we believe these enhancements will allow

us to better assess and manage our business at the total company level and will make it easier for us to quickly integrate any future acquisitions.

Initially, our focus will be to accelerate revenue growth organically, which we then plan to supplement with selective, strategic acquisitions and partnerships. While we will continue to sell to enterprise, small business, financial services and individual customers, our business is no longer organized by customer type. Instead, effective January 1, 2020, we began managing the company based on our product and service offerings, focusing on the 4 primary areas mentioned earlier: Payments, Cloud Solutions, Promotional Solutions and Checks. We expect to reinvest free cash flow into the 2 areas we view as our primary platforms for growth: Payments and Cloud Solutions. We appointed general managers for each of the 4 new focus areas and we continue to refine our new organization. Realignment such as this take time, considerable senior management effort, material "buy-in" from employees and significant investment. Beginning in the first quarter of 2020, the 4 focus areas become our reportable business segments, and we will begin reporting financial results under this new segment structure.

We are also continuing our efforts to simplify processes, eliminate duplicative processes and lower costs. As part of our cost reduction initiatives, we expect to continue enhancing our strategic supplier sourcing arrangements and assessing our real estate footprint. During 2019, we closed 9 facilities, integrating these operations into existing locations.

OUR CUSTOMERS

Traditionally, our customers have consisted of small businesses, financial institutions and consumers. While we do sell our products and services to other business enterprises, the 3 primary customer groups are discussed here.

Small Businesses

According to the latest data published by the U.S. Census Bureau, there were more than 33 million small businesses in the U.S. in 2017, defined as independent businesses having fewer than 500 employees. According to the latest data published by Statistics Canada, there were approximately 4.0 million small businesses in Canada as of December 2019, defined as businesses with fewer than 100 employees.

Economic conditions have a significant impact on our small business customers. We believe that small businesses are more likely to be significantly affected by economic conditions than larger, more established companies. During a sluggish economy, it may be more difficult for small businesses to obtain credit and they may choose to spend their limited funds on items other than our products and services. As such, the level of small business confidence and the rate of small business formations and closures impact our business. The index of small business optimism published by the National Federation of Independent Business (NFIB) was 102.7 in December 2019, consistent with the average index for 2019 of 103.0, but down from the average index of 106.7 reported in 2018. At the same time, the net percent of small business owners expecting general economic conditions to be better in 6 months, as published by the NFIB, held steady at 16% in December 2019, the same as in December 2018. Additionally, consumer spending and employment levels remained strong throughout 2019. Overall, the small business economy appeared to be healthy in 2019. However, we cannot predict whether economic trends affecting small businesses will improve, stay the same or worsen in the near future.

Financial Institutions

A significant portion of our business relies upon the health of the financial services industry. According to statistics currently available online from the Federal Deposit Insurance Corporation and the National Credit Union Administration, the number of financial institutions has been declining for many years. When financial institutions consolidate through mergers and acquisitions, often the newly combined entity seeks to reduce costs by leveraging economies of scale in purchasing, including its check and service provider contracts. This results in suppliers competing intensely on price in order to retain not only their previous business with one of the financial institutions, but also to gain the business of the other financial institution in the combined entity. Financial institution mergers and acquisitions can also impact the duration of our contracts. Normally, the length of our check supply contracts with financial institutions ranges from 3 to 6 years. However, contracts may be renegotiated or bought out mid-term. In addition, despite the secular decline in check usage, financial institutions may seek to maintain the profits they have historically generated from their check programs. This also puts significant pricing pressure on check suppliers. Nonetheless, we continue to work with our large financial institution clients to renew our check supply agreements for the long term.

Consumers

Over the past 2 years, we have provided check-related products and services to over 4.0 million consumers directly, and to millions more through our financial institution clients. In addition to the prevalence of alternative payment methods, personal check orders are also affected by consumer confidence, unemployment levels, consumer spending and housing stock and starts. Consumer spending and employment levels remained strong throughout 2019. According to statistics released by the U.S. Census Bureau in January 2020, housing units completed in 2019 through November increased approximately 5.6% as

compared to 2018. While it is likely that these economic trends had a slightly positive impact on our personal check volumes during 2019, we cannot predict whether economic trends will improve, stay the same or worsen in the near future.

COMPETITION

Checks and forms

Check printing continues to be a significant portion of our business. While we believe that there will continue to be demand for personal and business checks for the foreseeable future, the total number of checks written in the U.S. has been in decline since the mid-1990s. We expect that the number of checks written will continue to decline due to the digitization of payments, including debit cards, credit cards, direct deposit, wire transfers and other payment solutions, such as PayPal®, Apple Pay®, Square®, Zelle® and Venmo®. The use of business forms has also been declining due to continued competition from new technologies. Further information regarding the decline in check and forms usage can be found in Item 1A, "Strategic Risks – The use of checks and forms is declining and we may be unable to offset the decline with other sources of revenue."

In addition to competition from the digitization of payments, we also face intense competition from another large check printer in our traditional financial institution sales channel, from direct mail and internet-based sellers of personal and business checks, from check printing software vendors and from certain significant retailers. Pricing continues to be competitive in our financial institution sales channel, as financial institutions seek to maintain their previous levels of profitability, even as check usage declines. The market for business forms is also intensely competitive and highly fragmented. Current and potential competitors include traditional storefront printing companies, office superstores, wholesale printers and online printing companies.

We believe that we offer several key items that differentiate us from our competition. These include our new, environmentally responsible Smart Check by Deluxe® configuration design, our fully automated flat check delivery package, our personalized customer call center experience and the breadth of our service offerings, all of which are designed to help financial institutions operate more effectively and better address the needs of their customers throughout the customer life cycle. In addition, our Deluxe Business Advantage ProgramSM provides a fast and simple way for financial institutions to offer expanded personalized service to small businesses, and our ePayments offerings provide our customers with an alternative online payment and deposit solution.

Other products and services

The various markets for our service offerings are intensely competitive. Our competitors range from large and established companies to emerging start-ups. These service offerings are also rapidly evolving, creating opportunities for new competitors to enter the market. Current and potential competitors include, among others, financial institution core banking software providers, numerous financial technology service providers, advertising agencies, providers of data and analytics marketing solutions, companies offering website design and hosting and domain name registration, email and social media marketing services companies, payroll service providers and ePayments service providers. In addition, many of our potential financial institution clients have historically developed their key applications in-house and thus, we must also compete with their in-house capabilities.

The market for promotional products is also intensely competitive and highly fragmented. Current and potential competitors include traditional storefront printing companies, office superstores, wholesale printers, online printing companies and small business product resellers, as well as providers of custom apparel and gifts. The competitive landscape for online suppliers continues to be challenging as new internet businesses are introduced.

We believe we are well-positioned in this competitive landscape through our broad customer base, the breadth of our product and service offerings, multiple distribution channels, established relationships with our financial institution and enterprise clients and other partners, competitive pricing tiers, the ease of use of our web and other services, our high quality and our dependable service.

MANUFACTURING AND DISTRIBUTION/SUSTAINABLE PRACTICES

We continue to focus on improving the customer experience by providing excellent service and quality, while increasing our productivity and reducing our costs. We accomplish this by embedding lean operating principles in our manufacturing processes, while emphasizing a culture of continuous improvement. We have a shared services approach, which allows our businesses to leverage shared manufacturing facilities to optimize capacity utilization and enhance operational excellence. We continue to reduce costs by utilizing our assets and printing technologies more efficiently and by enabling employees to better leverage their capabilities and talents.

We continue to sponsor sustainability initiatives that encompass environmentally-friendly practices. We have aligned with suppliers that promote sustainable business practices and we seek opportunities to eliminate wasted material, reduce cycle times, use more environmentally-friendly materials and reduce solid waste sent to landfills. More than 90% of our check and forms paper is purchased from Forest Stewardship Council certified supplier mills, certain of our check designs are made from recycled paper and we use environmentally-friendly janitorial supplies at the majority of our locations. We recently announced our new, environmentally responsible Smart Check by Deluxe® check configuration, which utilizes eco-friendly materials and plant-based ink. In addition, our sustainability initiatives have benefited our results of operations over the past several years as we have focused on reducing our consumption of water, electricity and natural gas, and improving our transportation efficiency.

CYBERSECURITY

The secure and uninterrupted operation of our networks and systems, as well as the processing, maintenance and confidentiality of the sensitive information that resides on our systems, is critical to our business operations and strategy. Each year, we process hundreds of millions of records containing data related to individuals and businesses. Technology-based organizations such as ours are vulnerable to targeted attacks aimed at exploiting network and system applications or weaknesses. A successful cyber attack could result in the disclosure or misuse of sensitive business and personal information and data, cause interruptions in our operations, damage our reputation and deter clients and consumers from ordering our products and services. It could also result in litigation, the termination of client contracts, government inquiries and/or enforcement actions.

We have a risk-based cybersecurity program dedicated to protecting our data and solutions. We employ a defensive in-depth strategy, utilizing the concept of security layers and the CIA (confidential, integrity and availability) triad model. Organizationally, we have an Enterprise Risk Management Steering Committee led by our Assurance and Risk Advisory Services group, our Chief Financial Officer and our Chief Administrative Officer, with participation from our Chief Information Officer, our Chief Strategy Officer, our Chief Compliance Officer and our Chief Information Security Officer. This committee assesses and monitors our top enterprise risks, including cybersecurity, and provides quarterly updates to our board of directors. Our Chief Information Security Officer also provides periodic updates to our board of directors. In addition, we have an Enterprise Information Risk Management program and Cyber Incident Response teams designed to ensure compliance with our security policies and protocols. These teams are composed of personnel from across the company, as well as outside experts in some cases, who are tasked with ensuring that we are monitoring the effectiveness of our cybersecurity management programs.

In the event a cybersecurity incident is identified, we have established an Incident and Crisis Response Program to ensure communication to our executive leadership team and to coordinate the response to any incident. Our Chief Executive Officer, Chief Financial Officer, General Counsel, Chief Information Security Officer and Chief Compliance Officer are responsible for assessing such incidents for materiality, ensuring that any required notification or communication occurs and determining whether any prohibition on the trading of our common stock by insiders should be imposed prior to the disclosure of information about a material cybersecurity event.

For more information on risks related to data security, see Item 1A, "Operational Risks – Security breaches, computer malware or other cyber attacks involving the confidential information of our customers, employees or business partners could substantially damage our reputation, subject us to litigation and enforcement actions, and substantially harm our business and results of operations."

MATERIALS, SUPPLIES AND SERVICE PROVIDERS

The principal materials used in producing our main products are paper, plastics, ink, corrugated packaging and printing plate material, which we purchase from various sources. We also purchase stock business forms and promotional apparel produced by third parties. We believe that we will be able to obtain an adequate supply of materials from current or alternative suppliers.

We have entered into agreements with third-party providers for delivery services and information technology services, including telecommunications, network server and transaction processing services. We also rely upon third parties to provide a portion of the data used to maintain our proprietary and non-proprietary databases, including credit and non-credit data from the national credit bureaus and other data brokers. We believe we would be able to obtain an alternative source of supply if one or more of our service providers failed to perform.

SEASONALITY

We experience seasonal trends in sales of some of our products and services. For example, holiday card and retail packaging sales and revenues from rewards and loyalty solutions and search and email marketing are typically stronger in the fourth quarter of the year due to the holiday season. Sales of tax forms are stronger in the first and fourth quarters of the year,

and direct-to-consumer check sales have historically been stronger in the first quarter of the year. In addition, we may experience some fluctuations in revenue driven by our customers' marketing campaign cycles.

GOVERNMENT REGULATION

We are subject to numerous international, federal, state and local laws and regulations that affect our business activities in several areas, including, but not limited to, labor, advertising, taxation, data privacy and security, digital content, consumer reports, consumer protection, online payment services, real estate, e-commerce, intellectual property, health care, environmental matters, and workplace health and safety. The cost of complying with these laws and regulations is significant and regulators may adopt new laws or regulations at any time. We believe that our business is operated in substantial compliance with all applicable laws and regulations. For further information, see Item 1A, "Legal and Compliance Risks – Governmental regulation is continuously evolving and could limit or harm our business." On January 1, 2020, the California Consumer Privacy Act (CCPA) became effective. Among other requirements, businesses subject to the CCPA are required to proactively explain privacy notices to consumers when personal information is collected and it provides California residents the right to demand that company-held personal data be shared with them or deleted. While several other states and the federal government are currently considering similar legislation, we are not aware of any additional changes in laws or regulations that will have a significant impact on our business during 2020.

INTELLECTUAL PROPERTY

We rely on a combination of trademark and copyright laws, trade secret and patent protection and confidentiality and license agreements to protect our trademarks, software and other intellectual property. These protective measures afford only limited protection. Despite our efforts to protect our intellectual property, third parties may infringe or misappropriate our intellectual property or otherwise independently develop substantially equivalent products or services that do not infringe on our intellectual property rights, either of which may adversely impact our results of operations. In addition, we may be the target of aggressive and opportunistic enforcement of patents by third parties, including non-practicing entities.

EMPLOYEES

As of December 31, 2019, we employed 5,584 employees in the U.S., 653 employees in Canada and 115 employees in Australia and Europe. None of our employees are represented by labor unions, and we consider our employee relations to be good.

AVAILABLE INFORMATION

We make available through our investor relations website, www.deluxe.com/investor, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to these reports filed or furnished pursuant to section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after these items are electronically filed with or furnished to the SEC. These reports can also be accessed via the SEC website, sec.gov.

A printed copy of this report may be obtained without charge by calling 651-787-1068, by sending a written request to the attention of Investor Relations, Deluxe Corporation, P.O. Box 64235, St. Paul, Minnesota 55164-0235, or by sending an email request to investorrelations@deluxe.com.

Further information about Deluxe Corporation is also available at www.deluxe.com, facebook.com/deluxecorp and twitter.com/deluxecorp.

CODE OF ETHICS AND CORPORATE GOVERNANCE GUIDELINES

We have adopted a Code of Business Ethics that applies to all of our employees and our board of directors. The Code of Business Ethics is available on our investor relations website, www.deluxe.com/investor, and also can be obtained free of charge upon written request to the attention of Investor Relations, Deluxe Corporation, P.O. Box 64235, St. Paul, Minnesota 55164-0235. Any changes or waivers of the Code of Business Ethics will be disclosed on our website. In addition, our Corporate Governance Guidelines and the charters of the Audit, Compensation, Corporate Governance and Finance Committees of our board of directors are available on our website or upon written request.

INFORMATION ABOUT OUR EXECUTIVE OFFICERS

Our executive officers are elected by the board of directors each year. The following summarizes our executive officers and their positions.

Name	Age	Present Position	Executive Officer Since
Barry McCarthy	56	President and Chief Executive Officer	2018
Keith Bush	49	Senior Vice President, Chief Financial Officer	2017
Garry Capers, Jr.	43	Senior Vice President, General Manager, Cloud Solutions	2019
Jeffrey Cotter	52	Senior Vice President, Chief Administrative Officer and General Counsel	2018
Jane Elliott	53	Senior Vice President, Chief Human Resources Officer	2019
Tracey Engelhardt	55	Senior Vice President, General Manager, Checks	2012
Pete Godich	55	Senior Vice President, Chief of Operations	2008
Michael Mathews	47	Senior Vice President, Chief Information Officer	2013
Amanda Parrilli	41	Senior Vice President, New Business Development and Strategy	2019
Michael Reed	48	Senior Vice President, General Manager, Payments	2019
Thomas Riccio	46	Senior Vice President, General Manager, Promotional Solutions	2019
Christopher Thomas	51	Senior Vice President, Chief Revenue Officer	2019

[Barry McCarthy](#) joined us in November 2018 as President and Chief Executive Officer. Prior to joining us, Mr. McCarthy served in various senior executive positions, most recently, from November 2014 to November 2018, as Executive Vice President and Head of Network and Security Solutions, a publicly traded segment of First Data Corporation, a financial services company.

[Keith Bush](#) joined us in March 2017 as Senior Vice President, Chief Financial Officer. Prior to joining us, Mr. Bush was self-employed as a consultant from July 2016 to March 2017. From June 2009 through July 2016, Mr. Bush served as Senior Vice President, Finance for American Airlines.

[Garry Capers, Jr.](#) joined us in September 2019 as Senior Vice President, General Manager, Cloud Solutions. Prior to joining us, Mr. Capers was employed by Automatic Data Processing, Inc., a provider of human resources management software and services, from January 2017 to September 2019, most recently as Senior Vice President, General Manager, National Account Services Comprehensive Outsourcing Services and Operations. Prior to this, Mr. Capers held several positions at Equifax Inc., a global data, analytics and technology company, including General Manager, NACS Marketing Services from January 2014 to January 2017.

[Jeffrey Cotter](#) was named Chief Administrative Officer in January 2019. Mr. Cotter joined us in June 2018 as Senior Vice President, General Counsel. Prior to joining us, Mr. Cotter served as Senior Vice President and General Counsel for Tennant Company, a provider of cleaning products and solutions, from September 2017 to June 2018. From June 2008 to April 2017, Mr. Cotter served as Vice President, General Counsel for G&K Services, Inc., a provider of branded uniform and facility services programs.

[Jane Elliott](#) joined us in April 2019 as Senior Vice President, Chief Human Resources Officer. Prior to joining us, Ms. Elliott was employed by Global Payments Inc., a financial technology services provider, where she served as Executive Vice President and Chief Administrative Officer from January 2016 to March 2018 and Executive Vice President and Chief of Staff from November 2013 to January 2016.

[Tracey Engelhardt](#) was named Senior Vice President, General Manager, Checks in October 2019. From March 2017 to October 2019, Ms. Engelhardt served as Senior Vice President, Direct-to-Consumer, and from July 2012 to March 2017, she served as Vice President, Direct-to-Consumer.

[Pete Godich](#) was named Senior Vice President, Chief of Operations in October 2019. From January 2019 to October 2019, Mr. Godich served as Senior Vice President, Financial Services, and from March 2011 to January 2019, he served as Senior Vice President, Fulfillment.

[Michael Mathews](#) was named Senior Vice President, Chief Information Officer in March 2017. Mr. Mathews joined us in May 2013 as Vice President, Chief Information Officer.

Amanda Parrilli was named Senior Vice President, New Business Development and Strategy in October 2019. Ms. Parrilli joined us in February 2019 as Vice President, Strategy. Prior to joining us, Ms. Parrilli held several positions at The Home Depot, Inc. from July 2014 to February 2019, including Senior Director, Services Lead Generation; Director, Home Decorators Strategy; and Director, Strategic Business Development.

Michael Reed joined us in November 2019 as Senior Vice President, General Manager, Payments. Prior to joining us, Mr. Reed served as Managing Director, Global Payments and Product for Barclays Bank Plc in London from September 2018 to November 2019. From January 2015 to August 2018, Mr. Reed served as Managing Director at BofA Merrill Lynch Merchant Services (Europe) Limited, the European subsidiary of Banc of America Merchant Services, LLC.

Thomas Riccio joined us in September 2019 as Senior Vice President, General Manager, Promotional Solutions. Prior to joining us, Mr. Riccio was employed by Office Depot, Inc., a provider of business services and supplies, serving as Senior Vice President, Business Solutions Division from July 2017 to July 2019 and as Vice President, Sales and Strategic Initiatives, Business Solutions Division from December 2013 to July 2017.

Christopher Thomas joined us in July 2019 as Senior Vice President, Chief Revenue Officer. Prior to joining us, Mr. Thomas served as Senior Vice President, Solutioning and Commercial Functions for DXC Technology Company, an information technology solutions provider, from April 2017 to July 2019. From September 2014 to April 2017, Mr. Thomas served as Senior Vice President, Solutioning and Sales Support for HP Inc., a global technology company.

ITEM 1A. RISK FACTORS

Our businesses routinely encounter and address risks, many of which could cause our future results to be materially different than we currently anticipate. These risks include, but are not limited to, the principal factors listed below and the other matters set forth in this Annual Report on Form 10-K. We have disclosed all currently known material risks. We are also subject to general risks and uncertainties that affect many other companies, including overall economic, industry and market conditions. Additional risks not presently known to us, or that we currently believe are immaterial, may also adversely affect us. You should carefully consider all of these risks and uncertainties before investing in our common stock.

STRATEGIC RISKS

Our recently announced strategic plan to implement a new go-to-market strategy and more integrated operations, transforming us into a Trusted Business Technology™ company, is dependent upon our ability to successfully implement our strategic and tactical initiatives. If we are unsuccessful in implementing these initiatives in a timely manner, our financial results could be adversely affected.

The strategic plan we announced during the second quarter of 2019 contemplates that our strategic and tactical initiatives will result in, among other things, sustained organic revenue growth and strong segment adjusted earnings before interest, taxes, depreciation and amortization (EBITDA) margins. We plan to achieve these results through a variety of initiatives, including greater integration of operations and technology platforms, a more streamlined sales process, more targeted cross-selling to our existing customer base, growing that customer base and reducing our cost structure. In support of these initiatives, we anticipate that we will expend significant resources on infrastructure investments to scale the business and to advance our ability to accelerate revenue growth, including investments in enterprise resource planning, customer relationship management and human resources technology.

Our strategic plan could fall short of our expectations for many reasons, including, among others:

- our failure to generate profitable revenue growth;
- our failure to acquire new customers, retain our current customers and sell more products and services to current and new customers;
- our failure to implement sales technology that enables a single view of our customers;
- our inability to implement improvements to our technology infrastructure, our digital services offerings and other key assets to increase efficiency, enhance our competitive advantage and scale our operations;
- our failure to effectively manage the growth, expanding complexity and pace of change of our business and operations;
- our inability to effectively operate, integrate or leverage the businesses we acquire;
- the failure of our digital services and products to achieve widespread customer acceptance;
- our inability to promote, strengthen and protect our brand;
- our failure to attract and retain skilled talent to execute our strategy and sustain our growth;
- unanticipated changes in our business, markets, industry or the competitive landscape; and
- general economic conditions.

We can provide no assurance that our strategic and tactical initiatives will be successful, either in the short term or in the long term, that they will generate a positive return on our investment or that they will not materially reduce our EBITDA margins. Additionally, technology system implementations entail a significant degree of inherent risk, including disruptions that may impact our operations. Any of these circumstance could adversely affect our business, financial condition and results of operations. If our strategic plan is not successful, or if there is market perception that our strategic plan is not successful, our reputation and brand may be damaged and our stock price may decline.

Effective January 1, 2020, we realigned our existing businesses into four reportable segments: Payments, Cloud Solutions, Promotional Solutions and Checks. If this realignment is not successful, our results of operations could be adversely affected.

As we previously announced, we believe that we can achieve greater operational synergies, increase organic revenue growth and reduce overall costs by realigning our existing operations and managing the company based on our product and service offerings. Effective January 1, 2020, we began managing the company to focus on 4 primary focus areas: Payments, Cloud Solutions, Promotional Solutions and Checks. We appointed general managers for each of the 4 new focus areas and we continue to refine our new organization. Realignment such as this take time, considerable senior management effort, material "buy-in" from employees and significant investment. Additionally, our success is dependent on our ability to establish one culture around an enterprise model focused on the customer, as well as our ability to engage our employees and to inspire them to be open to change and to innovate. Transformations of this magnitude may temporarily reduce productivity. Further, we cannot guarantee that our transformation will be successful or result in the anticipated benefits, which would adversely affect our results of operations.

If we are unable to attract and retain customers in a cost-effective manner or effectively operate a multichannel customer experience, our business and results of operations would be adversely affected.

Our success depends on our ability to attract new and returning customers in a cost-effective manner. We use a variety of methods to promote our products and services, including a direct sales force, partner referrals, email marketing, purchased search results from online search engines, direct mail advertising, broadcast media, advertising banners, social media and other online links. Certain of these methods may become less effective or more expensive. For example, our response rates for direct mail advertising have been decreasing for some time, internet search engines could modify their algorithms or increase prices for purchased search results or certain partner referrals could decline. We continually evaluate and modify our marketing and sales efforts to achieve the most effective mix of promotional methods. Competitive pressure may inhibit our ability to reflect increased costs in the prices of our products and services and/or new marketing strategies may not be successful. Either of these occurrences would have an adverse impact on our ability to compete and our results of operations would be adversely affected. In addition, our check supply contracts generally run for a period of 3 to 6 years. At the end of the contract term, customers have the ability to renegotiate their contracts with us or to consider changing suppliers. Failure to achieve favorable contract renewals and/or to obtain new check supply customers would result in decreased revenue.

Additionally, we believe we must maintain a relevant, multichannel experience in order to attract and retain customers. Customers expect to have the ability to choose their method of ordering, whether via the mail, computer, phone or mobile device. Although we are constantly making investments to update our technology, we cannot predict the success of these investments. Multichannel marketing is rapidly evolving and we must keep pace with the changing expectations of our customers and new developments by our competitors. If we are unable to implement improvements to our customer-facing technology in a timely manner, or if our customer-facing technology does not function as designed, we could find it increasingly difficult to attract new and returning visitors, which would result in decreased revenue.

We face intense competition from other business enterprises, and we expect that competition will continue to increase.

The markets for our various service offerings are intensely competitive. Our competitors range from large and established companies to emerging start-ups. These service offerings are also rapidly evolving, creating opportunities for new competitors to enter the market. Current and potential competitors include, among others, financial institution core banking software providers, numerous financial technology service providers, advertising agencies, providers of data and analytics marketing solutions, companies offering website design and hosting and domain name registration, email and social media marketing services companies, payroll service providers and ePayments service providers. In addition, many of our potential financial institution clients have historically developed their key applications in-house and thus, we must also compete with their in-house capabilities.

The market for promotional products and business forms is also intensely competitive and highly fragmented. Current and potential competitors include traditional storefront printing companies, office superstores, wholesale printers, online printing companies and small business product resellers, as well as providers of custom apparel and gifts. The competitive landscape for online suppliers continues to be challenging as new internet businesses are introduced.

Although we are a leading check printer in the U.S., we face considerable competition in the check printing portion of the payments industry. In addition to competition from the digitization of payments, we also face intense competition from another large check printer in our traditional financial institution sales channel, from direct mail and internet-based sellers of personal and

business checks, from check printing software vendors and from certain significant retailers. Pricing continues to be competitive in our financial institution sales channel, as financial institutions seek to maintain their previous levels of profitability, even as check usage declines. Although we continue to work with our large financial institution clients to renew check supply contracts for the long term, the pricing levels included in any contract renewal could be lower than our current pricing levels.

We can provide no assurance that we will be able to compete effectively against current and future competitors. Our competitors may develop better products or technologies and may be able to adapt more quickly to new or emerging technologies and changes in customer requirements. Continued competition could result in price reductions, reduced profit margins and/or loss of customers, all of which would have an adverse effect on our results of operations and cash flows.

We face uncertainty regarding the success and integration of recent and future acquisitions, which could have an adverse impact on our operating results.

We completed several acquisitions during the past 3 years, the details of which appear under the caption "Note 6: Acquisitions" of the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. These acquisitions extended our range of products and services, including treasury management and data-driven marketing solutions and web services. In addition, over the past several years, we purchased the operations of several small business distributors with the intention of growing revenue in our enterprise accounts and dealer channels. The integration of any acquisition involves numerous risks, including, among others:

- difficulties and/or delays in assimilating operations, products and services, including effectively scaling revenue and ensuring a strong system of information security and controls is in place;
- failure to realize expected synergies and savings or to achieve projected profitability levels on a sustained basis;
- diversion of management's attention from other business concerns and risks of managing an increasingly diverse set of products and services across expanded and new industries;
- unanticipated integration costs;
- difficulty in maintaining controls, procedures and policies, especially when the acquired business was a non-public company and may not have employed the same rigor in these areas as required for a publicly traded company;
- decisions by our customers or the customers of the acquired business to temporarily or permanently seek alternate suppliers;
- difficulty in assimilating the acquired business into our corporate culture;
- increased compliance and other complexity;
- unidentified issues not discovered during our due diligence process, including product or service quality issues, intellectual property issues and tax or legal contingencies;
- failure to address legacy distributor account protection rights; and
- loss of key employees.

One or more of these factors could impact our ability to successfully operate, integrate or leverage an acquisition and could negatively affect our results of operations.

We have indicated that we plan to supplement organic revenue growth with strategically targeted acquisitions over time. The time and expense associated with finding suitable businesses, technologies or services to acquire can be disruptive to our ongoing business and may divert management's attention. We cannot predict whether suitable acquisition candidates can be identified or acquired on acceptable terms or whether any acquired products, technologies or businesses will contribute to our revenue or earnings to any material extent. We may need to seek financing for larger acquisitions, which would increase our debt obligations and may not be available on terms that are favorable to us. Additionally, acquisitions may result in additional contingent liabilities, additional amortization expense and/or future non-cash asset impairment charges related to acquired intangible assets and goodwill, and thus, could adversely affect our business, results of operations and financial condition.

The use of checks and forms is declining and we may be unable to offset the decline with other sources of revenue.

Checks continue to be a significant portion of our business, accounting for 39.0% of our consolidated revenue in 2019. We sell checks for personal and business use and believe that there will continue to be demand for personal and business checks for the foreseeable future, although the total number of checks written in the U.S. has been in decline since the mid-1990s. According to the most recent Federal Reserve study released in December 2019, the total number of checks written declined an average of 7.5% each year between 2015 and 2018, compared to an average decline of 3.4% each year between 2012 and 2015. We expect that the number of checks written will continue to decline due to the digitization of payments, including debit cards, credit cards, direct deposit, wire transfers, and other payment solutions, such as PayPal®, Apple Pay®, Square®, Zelle® and Venmo®. In addition, the RTP® system run by The Clearing House Payments Company, LLC is a real-time payments system that currently reaches over 50% of U.S. bank accounts. In August 2019, the U.S. Federal Reserve announced that it plans to develop its own real-time payments system, with an expected launch in 2023 or 2024.

The rate and the extent to which digital payments will replace checks, whether as a result of legislative developments, changing payment systems, personal preference or otherwise, cannot be predicted with certainty. Increased use of alternative

payment methods, or our inability to successfully offset the secular decline in check usage with other sources of revenue, would have an adverse effect on our business and results of operations.

The use of business forms has also been declining. Continual technological improvements, including the lower price and higher performance capabilities of personal computers, printers and mobile devices, have provided small business customers with alternative means to execute and record business transactions. Additionally, electronic transaction systems, off-the-shelf business software applications, web-based solutions and mobile applications have been designed to replace pre-printed business forms. Greater acceptance of electronic signatures also has contributed to the overall secular decline in printed products. It is difficult to predict the pace at which these alternative products and services will replace standardized business forms. If small business preferences change rapidly and we are unable to develop new products and services with comparable operating margins, our results of operations would be adversely affected.

We may not succeed in promoting and strengthening our brand, which could prevent us from acquiring customers and increasing revenue.

The success of our businesses depends on our ability to attract new and returning customers. For this reason, a component of our business strategy is the promotion and strengthening of the Deluxe brand. We believe that the importance of brand recognition is particularly essential for the success of our service offerings because of the level of competition for these services. Customer awareness of our brand, as well as the perceived value of our brand, depends largely on the success of our marketing efforts and our ability to provide a consistent, high-quality customer experience. Today, we have many brands associated with our products and services as a result of previous acquisitions. Unifying our brands to operate as one Deluxe is an essential part of our One Deluxe strategy. In February 2020, we unveiled our new Deluxe brand. Transitioning to one brand takes time and investment, and if the transition is not managed effectively, we could lose customers. We can also provide no assurance that our new branding strategy will be successful or will result in a positive return on our investment.

To promote our brand, we have incurred, and will continue to incur, expense related to advertising and other marketing efforts. We can provide no assurance that these efforts will be successful or that our revenue will increase at a level commensurate with our marketing expenditures. There is also the risk that adverse publicity, whether or not justified, could adversely affect our business. We currently have an agreement with television personality Ty Pennington, who appears in our online series, *Small Business Revolution – Main Street*. If Mr. Pennington, other business partners or key employees are the subject of adverse news reports or negative publicity, our reputation may be tarnished and our results of operations could be adversely affected.

A component of our brand promotion strategy is building on our relationship of trust with our customers, which we believe can be achieved by providing a high-quality customer experience. We have invested, and will continue to invest, resources in website development, design and technology, and customer service and production operations. Our ability to provide a high-quality customer experience is also dependent on external factors, including the reliability and performance of our suppliers, telecommunications providers and third-party carriers. Our brand value also depends on our ability to protect and use our customers' data in a manner that meets expectations. A security incident that results in unauthorized disclosure of our customers' sensitive data could materially harm our reputation. The failure of our brand promotion activities to meet our expectations or our failure to provide a high-quality customer experience for any reason could adversely affect our ability to attract new customers and maintain customer relationships, which would adversely harm our business and results of operations.

If we do not adapt to changes in technology in a timely and cost-effective manner, our ability to sustain and grow our business could be adversely affected.

The markets for many of the products and services we provide are characterized by constant change and innovation. The introduction of competing products and services using new technologies, the evolution of industry standards or the introduction of more attractive products or services, including the digitization of payments, could make some or all of our products and services less desirable, or even obsolete. These potential changes are magnified by the intense competition we face. To be successful, our technology-based products and services must keep pace with technological developments and evolving industry standards, address the ever-changing and increasingly sophisticated needs of our customers, and achieve market acceptance. Additionally, we must differentiate our service offerings from those of our competitors and from the in-house capabilities of our customers. We could lose current and potential customers if we are unable to develop products and services that meet changing demands in a timely manner. Additionally, we must continue to develop our skills, tools and capabilities to capitalize on existing and emerging technologies, and this requires us to incur substantial costs. Any of the foregoing risks could result in harm to our business and results of operations.

Our cost reduction initiatives may not be successful.

Intense competition, secular declines in the use of checks and business forms and the commoditization of web services compel us to continually improve our operating efficiency in order to maintain or improve profitability. Additionally, we intend to utilize structural cost savings to fund a large portion of the investments required to implement our One Deluxe strategy. Cost reduction initiatives have required, and will continue to require, up-front expenditures related to items such as redesigning and streamlining processes, consolidating information technology platforms, standardizing technology applications, further enhancing

our strategic supplier sourcing arrangements, improving real estate utilization and funding employee severance benefits. We can provide no assurance that we will achieve future cost reductions or that we will do so without incurring unexpected or greater than anticipated expenditures. Moreover, we may find that we are unable to achieve business simplification and/or cost reduction goals without disrupting our business, negatively impacting efforts to grow our business or reducing the effectiveness of our sustainability practices. As a result, we may choose to delay or forgo certain cost reductions as business conditions require. Failure to continue to improve our operating efficiency and to generate adequate savings to partially fund necessary investments, could adversely affect our business if we are unable to remain competitive.

OPERATIONAL RISKS

Security breaches, computer malware or other cyber attacks involving the confidential information of our customers, employees or business partners could substantially damage our reputation, subject us to litigation and enforcement actions, and substantially harm our business and results of operations.

Information security risks have increased in recent years, in part because of the proliferation of new technologies and increased use of the internet and cloud-based activities, as well as the increased sophistication and activities of hackers, terrorists and activists. We use internet-based channels that collect customers' financial account and payment information, as well as other sensitive information, including proprietary business information and personally identifiable information of our customers, employees, contractors, suppliers and business partners. Each year, we process hundreds of millions of records containing data related to individuals and businesses. Cybersecurity is one of the top risks identified by our Enterprise Risk Management Steering Committee, as technology-based organizations such as ours are vulnerable to targeted attacks aimed at exploiting network and system application weaknesses.

The secure and uninterrupted operation of our networks and systems, as well as the processing, maintenance and confidentiality of the sensitive information that resides on our systems, is critical to our business operations and strategy. We have a risk-based cybersecurity program dedicated to protecting our data and solutions. We employ a defensive in-depth strategy, utilizing the concept of security layers and the CIA (confidential, integrity and availability) triad model. Computer networks and the internet are, by nature, vulnerable to unauthorized access. An accidental or willful security breach could result in unauthorized access and/or use of customer information, including consumers' personally identifiable information. Our security measures could be breached by third-party action, computer viruses, accidents, employee or contractor error, or malfeasance by rogue employees. In addition, we depend on a number of third parties, including vendors, developers and partners, that are critical to our business and to which we may grant access to our customer or employee data. While we conduct due diligence on these third parties with respect to their security and business controls, we rely on them to effectively monitor and oversee these control measures. Individuals or third parties may be able to circumvent these controls and/or exploit vulnerabilities that may exist, resulting in the disclosure or misuse of sensitive business and personal customer or employee information and data.

Because techniques used to obtain unauthorized access, disable or degrade service, or sabotage computer systems change frequently, may be difficult to detect immediately, and generally are not recognized until they are launched against a target, we may be unable to implement adequate preventive measures. Unauthorized parties may also attempt to gain access to our systems or facilities through various means, including hacking into our systems or facilities, fraud, trickery or other means of deceiving employees and contractors. We have experienced external internet-based attacks by threat actors aimed at disrupting internet traffic and/or attempting to place illegal or abusive content on our or our customers' websites. Additionally, our customers and employees have been and will continue to be targeted by threat actors using social engineering techniques to obtain confidential information or using fraudulent "phishing" emails to introduce malware into the environment. To-date, these various threats have not materially impacted our customers, our business or our financial results. However, our technologies, systems and networks are likely to be the target of future attacks due to the increasing threat landscape for all technology businesses, and we can provide no assurance that future incidents will not be material.

Despite our significant cybersecurity efforts, a party that is able to circumvent our security measures could misappropriate our or our customers' personal and proprietary information, cause interruption in our operations, damage our computers or those of our users, or otherwise damage our reputation, all of which could deter clients and consumers from ordering our products and services and result in the termination of client contracts. Additionally, it is possible that there could be vulnerabilities that could impact large segments of mobile, computer or server architecture. Any of these events would adversely affect our business, financial condition and results of operations.

In addition, if we were to experience a material information security breach, we may be required to expend significant amounts of management time and financial resources to remedy, protect against or mitigate the effect of the breach, and we may not be able to remedy the situation in a timely manner, or at all. Furthermore, under payment card association rules and our contracts with debit and credit card processors, if there is a breach of payment card information that we store or that is stored by third parties with which we do business, we could be liable to the payment card issuing banks for their cost of issuing new cards and other related expenses. We could also lose our ability to accept credit and debit card payments from our customers, which would likely result in the loss of customers and the inability to attract new customers. We could also be exposed to time-consuming and expensive litigation, government inquiries and/or enforcement actions. If we are unsuccessful in defending a claim regarding information security breaches, we may be forced to pay damages, penalties and fines, and our insurance

coverage may not be adequate to compensate us fully for any losses that may occur. Contractual provisions with third parties, including cloud service providers, may limit our ability to recover losses resulting from the security breach of a business partner.

There are international, federal and state laws and regulations requiring companies to notify individuals of information security breaches involving their personal data, the cost of which would negatively affect our financial results. These mandatory disclosures regarding an information security breach often lead to widespread negative publicity. If we were required to make such a disclosure, it may cause our clients and customers to lose confidence in the effectiveness of our information security measures. Likewise, general publicity regarding information security breaches at other companies could lead to the perception among the general public that e-commerce is not secure. This could decrease traffic to our websites, negatively affect our financial results and limit future business opportunities.

Interruptions to our website operations or information technology systems, or failure to maintain our information technology platforms, could damage our reputation and harm our business.

The satisfactory performance, reliability and availability of our information technology systems is critical to our reputation and our ability to attract and retain customers. We could experience temporary interruptions in our websites, transaction processing systems, network infrastructure, service technologies, printing production facilities or customer service operations for a variety of reasons, including, among others, human error, software errors or design faults, security breaches, power loss, telecommunications failures, equipment failures, electrical disruptions, labor issues, vandalism, fire, flood, extreme weather, terrorism and other events beyond our control.

One of the cornerstones of our growth strategy is investment in our information technology infrastructure. We are investing significant resources to build out our technology platforms, including sales technology that enables a single view of our customers, thereby providing for deeper cross-sell opportunities. We implemented a human capital management system in January 2020, and we are also investing in our financial tools, including an enterprise resource planning system and a financial planning and analysis system. System implementations are complex. Any disruptions, delays or deficiencies in the design, implementation or operation of these systems, particularly any disruptions, delays or deficiencies that impact our operations, could adversely affect our ability to effectively run and manage our business. In addition, our continued development and implementation of new generation software solutions and information technology infrastructure may take longer than originally expected and may require the acquisition of additional personnel and other resources, which may adversely affect our business, results of operations and financial condition. Any inability to deploy new generation information technology throughout our organization would result in operating multiple platforms, which would increase costs.

Furthermore, as we focus resources on our growth strategy, we have reduced our investment in the development of the systems that support our check and forms businesses, with a focus on sustaining and maintaining such systems. These systems operate with minimal or no vendor support, contain hardware and software that we are not able to update and are difficult to maintain, yet any interruption caused by a failure or breach of these systems could create disruption in these businesses.

In recent years, we shifted a substantial portion of our applications to a cloud-based environment. While we maintain redundant systems and backup databases and applications software to ensure continuous access to cloud services, it is possible that access to our software capabilities could be interrupted and our disaster recovery planning may not account for all eventualities. The failure of our systems could interfere with the delivery of products and services to our customers, impede our customers' ability to do business and result in the loss or corruption of critical data. In addition to the potential loss of customers, we may be required to incur additional development costs and divert technical and other resources, and we may be the subject of negative publicity and/or liability claims.

If any of our significant information technology systems suffer severe damage, disruption or shutdown, and our disaster recovery and business continuity plans do not effectively resolve the issues in a timely manner, our results of operations would be adversely affected, and our business interruption insurance coverage may not be adequate to compensate us fully for any losses that may occur.

If third-party providers of certain significant information technology needs are unable to provide services, our business could be disrupted and the cost of such services could increase.

We have entered into agreements with third-party providers for information technology services, including telecommunications, network server, cloud computing and transaction processing services. In addition, we have agreements with companies to provide services such as online payment solutions. A service provider's ability to provide services could be disrupted for a variety of reasons, including, among others, human error, software errors or design faults, security breaches, power loss, telecommunications failures, equipment failures, electrical disruptions, labor issues, vandalism, fire, flood, extreme weather, terrorism and other events beyond their control. In the event that one or more of our service providers is unable to provide adequate or timely information technology services, our ability to deliver products and services to our customers could be adversely affected. Although we believe we have taken reasonable steps to protect our business through contractual arrangements with our service providers, we cannot completely eliminate the risk of disruption in service. Any significant disruption could harm our business, including damage to our brand and loss of customers. Additionally, although we believe that information technology services are available from numerous sources, a failure to perform by one or more of our service

providers could cause a material disruption in our business while we obtain an alternative service provider. The use of substitute third-party providers could also result in increased expense.

If we are unable to attract and retain key personnel and other qualified employees, our business could suffer and our stock price could decline.

For us to successfully grow and compete, we must recruit, retain and develop the key personnel necessary to execute our growth strategy. This is of particular importance as we realign our existing operations in support of our growth strategy. The success of this realignment and our business depends on the contributions and abilities of key employees, especially in our digital services businesses and specifically in sales, marketing, product management and development, data analytics and information technology. If we are unable to retain our existing employees and/or attract qualified personnel, we may not be able to grow and manage our business effectively. We can provide no assurance that we will be successful in attracting and retaining such personnel.

The cost and availability of materials, delivery and other third-party services could adversely affect our operating results.

We are subject to risks associated with the cost and availability of paper, plastics, ink, retail packaging supplies, promotional materials and other raw materials. Paper costs represent a significant portion of our materials expense. Paper is a commodity and its price has been subject to volatility due to supply and demand in the marketplace, as well as volatility in the raw material and other costs incurred by our paper suppliers. There are also relatively few paper suppliers and these suppliers are under financial pressure as paper use declines. As such, when our suppliers increase paper prices, we may not be able to obtain better pricing from alternative suppliers. Historically, we have not been negatively impacted by paper shortages because of our relationships with paper suppliers. However, we can provide no assurance that we will be able to purchase sufficient quantities of paper if such a shortage were to occur.

We depend upon third-party providers for delivery services and for other outsourced products and services. Events resulting in the inability of these service providers to perform their obligations, such as work slowdowns or extended labor strikes, could adversely impact our results of operations by requiring us to secure alternate providers at higher costs. Postal rates are dependent on the operating efficiency of the U.S. Postal Service (USPS) and on legislative mandates imposed upon the USPS. Postal rates have increased in recent years and the USPS has incurred significant financial losses. This may result in continued changes to the breadth and/or frequency of USPS mail delivery services. In addition, fuel costs have fluctuated over the past several years. Increased fuel costs can increase the costs we incur to deliver products to our customers, as well as the price we pay for outsourced products. We also rely on third-party providers for certain technology, processing and support functions. If we are unable to renew our existing contracts with our most significant providers, we may be forced to obtain alternative suppliers at higher costs. Competitive pressures and/or contractual arrangements may inhibit our ability to reflect increased costs in the price of our products and services. Any of the foregoing risks could result in harm to our business and results of operations.

We are subject to customer payment-related risks, which could adversely affect our business and financial results.

We may be liable for fraudulent transactions conducted on our websites, such as the use of stolen credit card numbers. While we do have safeguards in place, we cannot prevent all fraudulent transactions. To date, we have not incurred significant losses from payment-related fraud. However, such transactions negatively impact our results of operations and could subject us to penalties from payment card associations for inadequate fraud protection.

LEGAL AND COMPLIANCE RISKS

Third-party claims could result in costly and distracting litigation and, in the event of an unfavorable outcome, could have an adverse effect on our business, financial condition and results of operations.

From time to time, we are involved in claims, litigation and other proceedings relating to the conduct of our business, including purported class action litigation. Such legal proceedings may include claims related to our employment practices; claims alleging breach of contractual obligations; claims asserting deceptive, unfair or illegal business practices; claims alleging violations of consumer protection-oriented laws; claims related to legacy distributor account protection rights; or claims related to environmental matters. In addition, third parties may assert patent and other intellectual property infringement claims against us and/or our clients, which could include aggressive and opportunistic enforcement of patents by non-practicing entities. Any such claims could result in litigation against us and could also result in proceedings being brought against us by various federal and state agencies that regulate our businesses. The number and significance of these claims and proceedings has increased as our businesses have evolved and expanded in scope. These claims, whether successful or not, could divert management's attention, result in costly and time-consuming litigation, or both. Accruals for identified claims or lawsuits are established based on our best estimates of the probable liability. However, we cannot accurately predict the ultimate outcome of any such proceedings due to the inherent uncertainties of litigation and other dispute resolution mechanisms. Any unfavorable outcome of a material claim or material litigation could require the payment of monetary damages or fines, attorneys' fees or costly and

undesirable changes to our products, features or business practices, which would result in a material adverse effect on our business, financial condition and results of operations.

Governmental regulation is continuously evolving and could limit or harm our business.

We are subject to numerous international, federal, state and local laws and regulations that affect our business activities in several areas, including, but not limited to, labor, advertising, taxation, data privacy and security, digital content, consumer reports, consumer protection, online payment services, real estate, e-commerce, intellectual property, health care, environmental matters, and workplace health and safety. The cost of complying with these laws and regulations is significant. In addition, regulators may adopt new laws or regulations at any time, which could trigger enforcement actions, or their interpretation of existing laws may change and/or differ from ours. For example, the California Consumer Privacy Act (CCPA) became effective on January 1, 2020. Among other requirements, businesses subject to the CCPA are required to proactively explain privacy notices to consumers when personal information is collected and it provides California residents the right to demand that company-held personal data be shared with them or deleted. Several other states and the federal government are currently considering similar legislation.

The various regulatory requirements to which we are subject could impose significant limitations on our business activities, require changes to our business, restrict our use or storage of personal information, or cause changes in our customers' purchasing behavior, which may make our business more costly and/or less efficient and may require us to modify our current or future products, services, systems or processes. We cannot quantify or predict with any certainty the likely impact of such changes on our business, prospects, financial condition or results of operations.

Portions of our business operate within highly regulated industries and our business results could be significantly affected by the laws and regulations to which we are subject. For example, international, federal and state laws and regulations regarding the protection of certain consumer information require us to develop, implement and maintain policies and procedures to protect the security and confidentiality of consumers' nonpublic personal information. Portions of our business are subject to regulations affecting payment processing, including ACH, remote deposit capture, and lockbox services. These laws and regulations require us to develop, implement, and maintain certain policies and procedures related to payment processing. We are also subject to additional requirements in certain of our contracts with financial institution clients and communications service providers, which are often more restrictive than the regulations, as well as confidentiality clauses in certain of our contracts related to small businesses' customer information. These regulations and agreements typically limit our ability to use or disclose nonpublic personal information for other than the purposes originally intended, which could limit business opportunities. Proposed privacy and cyber security regulations may also increase the cost of compliance for the protection of collected data. The complexity of compliance with these various regulations may increase our cost of doing business and may affect our clients, reducing their discretionary spending and thus, reducing their capacity to purchase our products and services.

Due to our increasing use of the internet for sales and marketing, laws specifically governing digital commerce, the internet, mobile applications, search engine optimization, behavioral advertising, privacy and email marketing may have an impact on our business. Existing and future laws governing issues such as digital and social marketing, privacy, consumer protection or commercial email may limit our ability to market and provide our products and services. Changing data protection regulations may increase the cost of compliance in servicing domestic and international markets for our wholesale and retail business services channels. More restrictive legislation, such as new privacy laws, search engine marketing restrictions, "anti-spam" regulations or email privacy rules, could decrease marketing opportunities, decrease traffic to our websites and/or increase the cost of obtaining new customers.

Because of additional regulatory costs, financial institutions may continue to put significant pricing pressure on their suppliers, including their check and service providers. The increase in cost and profit pressure may also lead to further consolidation of financial institutions. Additionally, some financial institutions do not permit offers of add-on services, such as bundled products, fraud/identity protection, expedited check delivery or rewards programs, to their customers. It would have an adverse impact on our results of operations if we were unable to market such services to consumers or small businesses through the majority of our financial institution clients. Additionally, as our product and service offerings become more technologically focused, and with expanded regulatory expectations for supervision of third-party service providers, additional portions of our business could become subject to direct federal regulation and/or examination. This would increase our cost of doing business and could slow our ability to introduce new products and services and otherwise adapt to a rapidly changing business environment.

We may be unable to protect our rights in intellectual property, which could harm our business and ability to compete.

We rely on a combination of trademark and copyright laws, trade secret and patent protection and confidentiality and license agreements to protect our trademarks, software and other intellectual property. These protective measures afford only limited protection. Despite our efforts to protect our intellectual property, third parties may infringe or misappropriate our intellectual property or otherwise independently develop substantially equivalent products or services that do not infringe on our intellectual property rights. Policing unauthorized use of our intellectual property is difficult. We may be required to spend significant resources to protect our trade secrets and to monitor and police our intellectual property rights. The loss of intellectual

property protection or the inability to secure or enforce intellectual property protection could harm our business and ability to compete.

Activities of our customers or the content of their websites could damage our reputation and/or adversely affect our financial results.

As a provider of domain name registration, web hosting services and customized business products, we may be subject to potential liability for the activities of our customers on or in connection with their domain names or websites, for the data they store on our servers, including information accessible through the "dark web," or for images or content that we produce on their behalf. Customers may also launch distributed denial of service attacks or malicious executables, such as viruses, worms or trojan horses, from our servers. Although our agreements with our customers prohibit illegal use of our products and services and permit us to take appropriate action for such use, customers may nonetheless engage in prohibited activities or upload or store content with us in violation of applicable law. Our reputation may be negatively impacted by the actions of customers that are deemed to be hostile, offensive or inappropriate, or that infringe the copyright or trademark of another party. The safeguards we have established may not be sufficient to avoid harm to our reputation, especially if the inappropriate activities are high profile.

Laws relating to the liability of online services companies for information, such as online content disseminated through their services, are subject to frequent challenges. In spite of settled law in the U.S., claims are made against online services companies by parties who disagree with the content. Where our online content is accessed on the internet outside of the U.S., challenges may be brought under foreign laws that do not provide the same protections for online services companies as in the U.S. These challenges in either U.S. or foreign jurisdictions may give rise to legal claims alleging defamation, libel, invasion of privacy, negligence or copyright or trademark infringement, based on the nature and content of the materials disseminated through our services. Certain of our products and services include content generated by users of our online services. Although this content is not generated by us, claims of defamation or other injury may be made against us for that content. If such claims are successful, our financial results would be adversely affected. Even if the claims do not result in litigation or are resolved in our favor, the time and resources necessary to resolve them could divert management's attention and adversely affect our business and financial results.

FINANCIAL RISKS

Asset impairment charges would have a negative impact on our results of operations.

Goodwill represented 41% of our total assets as of December 31, 2019. On at least an annual basis, we assess whether the carrying value of goodwill is impaired. This analysis considers several factors, including economic, market and industry conditions. Circumstances that could indicate a decline in the fair value of one or more of our reporting units include, but are not limited to, the following:

- changes in our business strategies, structure and/or the allocation of resources;
- the failure of our acquisitions to achieve expected operating results;
- changes in market conditions, including increased competition;
- the loss of significant customers;
- a decline in our stock price for a sustained period;
- a downturn in economic conditions that negatively affects our actual and forecasted operating results; or
- a material acceleration of order volume declines for checks and forms.

Such situations may require us to record an impairment charge for a portion of goodwill. We are also required to assess the carrying value of other long-lived assets, including intangible assets and assets held for sale. Information regarding our 2019 impairment analyses can be found under the caption "Note 8: Fair value measurements" of the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. If we are required to record additional asset impairment charges for any reason, our consolidated results of operations would be adversely affected.

Economic conditions may adversely affect trends in business and consumer spending, which may adversely impact demand for our products and services.

Economic conditions have affected, and will continue to affect, our results of operations and financial position. Current and future economic conditions that affect business and consumer spending, including levels of business and consumer confidence, unemployment levels, consumer spending and the availability of credit, as well as uncertainty or volatility in our customers' businesses, may adversely affect our business and results of operations.

A significant portion of our business relies on small business spending. Economic conditions have a significant impact on our small business customers. We believe that small businesses are more likely to be significantly affected by economic conditions than larger, more established companies. During a sluggish economy, it may be more difficult for small businesses to obtain credit and they may choose to spend their limited funds on items other than our products and services. As such, the level

of small business confidence and the rate of small business formations and closures impact our business. The index of small business optimism published by the National Federation of Independent Business (NFIB) was 102.7 in December 2019, consistent with the average index for 2019 of 103.0, but down from the average index of 106.7 reported in 2018. At the same time, the net percent of small business owners expecting general economic conditions to be better in 6 months, as published by the NFIB, held steady at 16% in December 2019, the same as in December 2018. Additionally, consumer spending and employment levels remained strong throughout 2019. Overall, the small business economy appeared to be healthy in 2019. However, we cannot predict whether economic trends affecting small businesses will improve, stay the same or worsen in the near future.

A significant portion of our business also relies upon the health of the financial services industry, including merger and acquisition activity. As a result of global economic conditions in past years, a number of financial institutions sought additional capital, merged with other financial institutions and, in some cases, failed. The failure of one or more of our larger financial institution clients, or large portions of our customer base, could adversely affect our operating results. In addition to the possibility of losing a significant client, the inability to recover prepaid product discount payments made to one or more of our larger financial institution clients, or the inability to collect accounts receivable or contractually required contract termination payments, could have a significant negative impact on our results of operations. There may also be an increase in financial institution mergers and acquisitions during periods of economic uncertainty or as a result of other factors affecting the financial services industry. Such an increase could adversely affect our operating results. Often the newly combined entity seeks to reduce costs by leveraging economies of scale in purchasing, including its check supply and business services contracts. This results in providers competing intensely on price in order to retain not only their previous business with one of the financial institutions, but also to gain the business of the other party in the combined entity. Although we devote considerable effort toward the development of a competitively-priced, high-quality selection of products and services for the financial services industry, there can be no assurance that significant financial institution clients will be retained or that the impact of the loss of a significant client can be offset through the addition of new clients or by expanded sales to our remaining clients.

Our variable-rate indebtedness exposes us to interest rate risk.

The majority of the borrowings under our revolving credit facility are subject to variable rates of interest and expose us to interest rate risk. If interest rates were to increase, our interest expense would increase, negatively affecting earnings and reducing cash flows available for working capital, capital expenditures and acquisitions.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

As of December 31, 2019, we occupied 63 facilities throughout the U.S., 7 facilities in Canada, 2 facilities in Europe and 1 facility in Australia, where we conduct printing and fulfillment, call center, data center and administrative functions. Because of our shared services approach to most of our business functions, many of our facilities are utilized for the benefit of more than one of our business segments. Approximately 20% of our facilities are owned, while the remaining 80% are leased. Our facilities have a combined floor space of approximately 2.9 million square feet. None of our owned properties are mortgaged or are held subject to any significant encumbrance. We believe that existing leases will be renegotiated as they expire or that suitable alternative properties will be leased on acceptable terms. We believe that our properties are sufficiently maintained and are adequate and suitable for our business needs as presently conducted. In conjunction with the realignment of our business and our continuing cost reduction initiatives, we continue to assess our real estate footprint.

ITEM 3. LEGAL PROCEEDINGS

We record provisions with respect to identified claims or lawsuits when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Claims and lawsuits are reviewed quarterly and provisions are taken or adjusted to reflect the status of a particular matter. We believe the recorded reserves in our consolidated financial statements are adequate in light of the probable and estimable outcomes. Recorded liabilities were not material to our financial position, results of operations or liquidity, and we do not believe that any of the currently identified claims or litigation will materially affect our financial position, results of operations or liquidity upon resolution. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. If an unfavorable ruling were to occur, it may cause a material adverse impact on our financial position, results of operations or liquidity in the period in which the ruling occurs or future periods.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

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

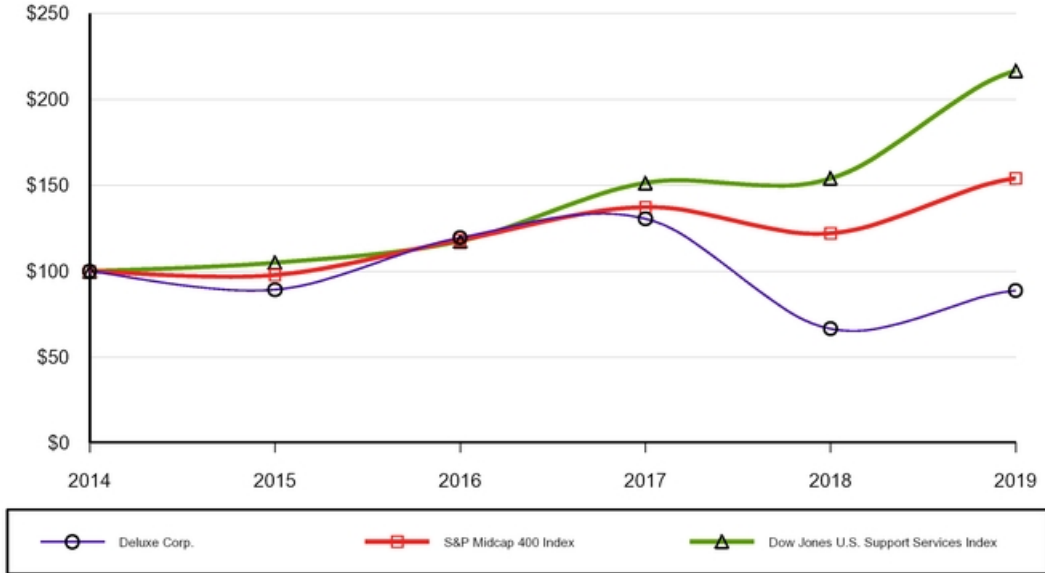
Our common stock is traded on the New York Stock Exchange under the symbol DLX. Dividends are declared by our board of directors on a quarterly basis, and therefore, are subject to change. As of December 31, 2019, the number of shareholders of record was 5,668.

In October 2018, our board of directors authorized the repurchase of up to \$500.0 million of our common stock. This authorization has no expiration date. We did not repurchase any shares during the fourth quarter of 2019 and \$301.5 million remained available for repurchase as of December 31, 2019.

While not considered repurchases of shares, we do at times withhold shares that would otherwise be issued under equity-based awards to cover the withholding taxes due as a result of the exercise or vesting of such awards. During the fourth quarter of 2019, we withheld 17,118 shares in conjunction with the vesting and exercise of equity-based awards.

The table below compares the cumulative total shareholder return on our common stock for the last five fiscal years with the cumulative total return of the S&P MidCap 400 Index and the Dow Jones U.S. Support Services (DJUSIS) Index.

**COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN
ASSUMES INITIAL INVESTMENT OF \$100
DECEMBER 2019**



The graph assumes that \$100 was invested on December 31, 2014 in each of Deluxe common stock, the S&P MidCap 400 Index and the DJUSIS Index, and that all dividends were reinvested.

ITEM 6. SELECTED FINANCIAL DATA

The following table shows certain selected financial data for the five years ended December 31, 2019. This information should be read in conjunction with *Management's Discussion and Analysis of Financial Condition and Results of Operations* appearing in Part II, Item 7 of this report and our consolidated financial statements appearing in Part II, Item 8 of this report. These items include discussion of various factors that affect the comparability of the selected financial data, including asset impairment charges, the Tax Cuts and Jobs Act of 2017 and business acquisitions, as well as the adoption of Accounting Standards Update (ASU) No. 2016-02, *Leasing*, and related amendments on January 1, 2019. Historical results are not necessarily indicative of future results.

(dollars and orders in thousands, except per share and per order amounts)

	2019	2018	2017	2016	2015
Statement of (Loss) Income Data:					
Total revenue	\$ 2,008,715	\$ 1,998,025	\$ 1,965,556	\$ 1,849,062	\$ 1,772,817
As a percentage of total revenue:					
Gross profit	59.5%	60.4%	62.2%	63.9%	63.9%
Selling, general and administrative expense	44.4%	42.7%	42.2%	43.7%	43.8%
Operating (loss) income	(7.9%)	11.6%	16.7%	19.8%	19.8%
Operating (loss) income	\$ (158,141)	\$ 231,221	\$ 329,176	\$ 366,887	\$ 351,634
Net (loss) income:	(199,897)	149,630	230,155	222,382	218,629
Per share - basic	(4.65)	3.18	4.75	4.68	4.39
Per share - diluted	(4.65)	3.16	4.72	4.65	4.36
Balance Sheet Data:					
Cash and cash equivalents	\$ 73,620	\$ 59,740	\$ 59,240	\$ 76,574	\$ 62,427
Return on average assets ⁽¹⁾	(9.4%)	6.6%	10.5%	11.4%	12.4%
Total assets	\$ 1,943,311	\$ 2,305,096	\$ 2,208,827	\$ 2,184,338	\$ 1,842,153
Long-term obligations ⁽²⁾	931,319	911,864	709,300	758,648	629,018
Statement of Cash Flows Data:					
Net cash provided by operating activities	\$ 286,653	\$ 339,315	\$ 338,431	\$ 319,312	\$ 309,631
Net cash used by investing activities	(75,751)	(275,414)	(180,891)	(279,511)	(251,140)
Net cash (used) provided by financing activities	(186,794)	(39,825)	(182,956)	5,998	(30,237)
Purchases of capital assets	(66,595)	(62,238)	(47,450)	(46,614)	(43,261)
Payments for acquisitions, net of cash acquired	(11,605)	(214,258)	(139,223)	(239,664)	(212,990)
Payments for common shares repurchased	(118,547)	(200,000)	(65,000)	(55,224)	(59,952)
Other Data:					
Cash dividends per share	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20	\$ 1.20
Orders ⁽³⁾	47,815	47,534	49,981	52,176	53,138
Revenue per order ⁽³⁾	\$ 42.01	\$ 42.03	\$ 39.33	\$ 35.44	\$ 33.36
Number of employees	6,352	6,701	5,886	6,026	5,874
Number of printing facilities ⁽⁴⁾	11	11	11	12	11
Number of call center facilities ⁽⁴⁾	25	27	26	26	14

⁽¹⁾ Return on average assets is calculated as net (loss) income divided by average assets for the period.

⁽²⁾ Long-term obligations include the current and long-term portions of our debt obligations and finance lease obligations, formerly known as capital lease obligations, as well as the current and long-term portions of our operating lease obligations as of December 31, 2019.

⁽³⁾ Orders is our company-wide measure of volume and includes both products and services.

⁽⁴⁾ As of December 31, 2019, we had 2 facilities that contain both printing and call center functions and thus, are included in both captions. We had 39 additional facilities which house small customer fulfillment operations, data centers and general office space. This information excludes vacant facilities or those associated with businesses held for sale as of each date.

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

The following Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) should be read in conjunction with the consolidated audited financial statements and related notes included in Part II, Item 8 of this Form 10-K. Our MD&A includes the following sections:

- [Executive Overview](#) that discusses what we do, our operating results at a high level and our financial outlook for the upcoming year;
- [Consolidated Results of Operations; Restructuring, Integration and Other Costs; CEO Transition Costs and Segment Results](#) that includes a more detailed discussion of our revenue and expenses;
- [Cash Flows and Liquidity, Capital Resources and Other Financial Position Information](#) that discusses key aspects of our cash flows, capital structure and financial position;
- [Off-Balance Sheet Arrangements, Guarantees and Contractual Obligations](#) that discusses our financial commitments; and
- [Critical Accounting Policies](#) that discusses the policies we believe are most important to understanding the assumptions and judgments underlying our financial statements.

Please note that this MD&A discussion contains forward-looking statements that involve risks and uncertainties. Part I, Item 1A of this report outlines currently known material risks and important information to consider when evaluating our forward-looking statements. The Private Securities Litigation Reform Act of 1995 (the "Reform Act") provides a "safe harbor" for forward-looking statements to encourage companies to provide prospective information. When we use the words or phrases "should result," "believe," "intend," "plan," "are expected to," "targeted," "will continue," "will approximate," "is anticipated," "estimate," "project," "outlook," "forecast" or similar expressions in this Annual Report on Form 10-K, in future filings with the Securities and Exchange Commission, in our press releases, investor presentations and in oral statements made by our representatives, they indicate forward-looking statements within the meaning of the Reform Act.

This MD&A includes financial information prepared in accordance with accounting principles generally accepted in the U.S. ("GAAP"). In addition, we discuss adjusted diluted earnings per share (EPS) and adjusted earnings before interest, taxes, depreciation and amortization (EBITDA), which are non-GAAP financial measures. We believe that these non-GAAP financial measures, when reviewed in conjunction with GAAP financial measures, can provide useful information to assist investors in analyzing our current period operating performance and in assessing our future period operating performance. For this reason, our internal management reporting also includes these financial measures, which should be considered in addition to, and not as superior to or as a substitute for, GAAP financial measures. We strongly encourage investors and shareholders to review our financial statements and publicly-filed reports in their entirety and not to rely on any single financial measure. Our measures of adjusted diluted EPS and adjusted EBITDA may not be comparable to similarly titled measures used by other companies and therefore, may not result in useful comparisons. The reconciliation of our non-GAAP financial measures to the most directly comparable GAAP measures can be found in *Consolidated Results of Operations*.

EXECUTIVE OVERVIEW

As of December 31, 2019, we operated 3 reportable business segments: Small Business Services, Financial Services and Direct Checks. Our business segments were generally organized by customer type and reflected the way we managed the company through that date. Further information regarding our segments and our product and service offerings can be found under the caption "Note 19: Business segment information" of the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

2019 results vs. 2018 – Loss before income taxes for 2019 of \$185.6 million, compared to income before income taxes of \$212.6 million for 2018, reflected an increase in asset impairment charges of \$289.7 million (as described below), an increase in restructuring, integration and other costs of \$58.3 million in support of our growth strategies and to increase our efficiency, and continued volume reductions in personal and business checks and forms, due primarily to the secular decline in check and forms usage. Additionally, we made investments in our transformation to One Deluxe, shipping and material rates increased in 2019, medical costs increased approximately \$11.5 million, interest expense increased \$7.6 million, organic Small Business Services marketing solutions and web services revenue declined and the Small Business Services commission rate on customer referrals increased. Additionally, share-based compensation increased \$6.3 million, driven by an increase in the level of equity awards in 2019, and check pricing pressure within Financial Services continued. We also recognized gains from sales of businesses and customer lists within Small Business Services of \$15.6 million in 2018. These increases in loss before income taxes were partially offset by benefits of approximately \$50.0 million from continuing initiatives to reduce our cost structure, the benefit of Small Business Services price increases, a decrease in amortization expense related to acquisitions completed prior to 2018 and incremental earnings from businesses acquired.

Diluted loss per share for 2019 of \$4.65, as compared to diluted EPS of \$3.16 for 2018, reflects the increase in loss before income taxes described in the preceding paragraph, as well as an unfavorable income tax rate as compared to 2018, partially offset by lower average shares outstanding in 2019. Adjusted diluted EPS for 2019 was \$6.82, compared to \$6.88 for 2018, and excludes the impact of non-cash items or items that we believe are not indicative of ongoing operations. A reconciliation of diluted (loss) earnings per share to adjusted diluted EPS can be found in *Consolidated Results of Operations*.

Asset impairment charges – Net loss for 2019 was driven by the impact of pretax asset impairment charges in the third quarter of 2019 of \$391.0 million, or \$7.94 per share. The impairment charges related to the goodwill of our Small Business Services Web Services and Financial Services Data-Driven Marketing reporting units, as well as amortizable intangible assets, primarily in our Small Business Services Web Services reporting unit. This compares to pretax asset impairment charges of \$101.3 million, or \$1.96 per share, in 2018. Further information regarding these impairment charges can be found under the caption “Note 8: Fair value measurements” of the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

“One Deluxe” Strategy

A detailed discussion of our strategy can be found in Part I, Item 1 of this report. In support of our strategy, we are investing significant resources to build out our technology platforms, including sales technology that enables a single view of our customers, thereby providing for deeper cross-sell opportunities. We implemented a human capital management system in January 2020, and we are also investing in our financial tools, including an enterprise resource planning system and a financial planning and analysis system. Strategically, we believe these enhancements will allow us to better assess and manage our business at the total company level and will make it easier for us to quickly integrate any future acquisitions. We plan to invest approximately \$70.0 million in 2020 in support of these initiatives, consisting of capitalized cloud computing implementation costs and expense items. We plan to fund a large portion of these investments through structural cost savings.

While we will continue to sell to enterprise, small business, financial services and individual customers, our business is no longer organized by customer type. Instead, effective January 1, 2020, we began managing the company based on our product and service offerings, focusing on 4 primary business areas: Payments, Cloud Solutions, Promotional Solutions and Checks. We expect to reinvest free cash flow into the 2 areas we view as our primary platforms for growth: Payments and Cloud Solutions. We appointed general managers for each of the 4 new focus areas and we continue to refine our new organization. Realignment such as this take time, considerable senior management effort, material “buy-in” from employees and significant investment. Beginning in the first quarter of 2020, the 4 focus areas become our reportable business segments, and we will begin reporting financial results under this new segment structure.

Outlook for 2020

We anticipate that consolidated revenue for 2020 will be between \$2.000 billion and \$2.040 billion, compared to \$2.009 billion for 2019. We expect that adjusted EBITDA for 2020 will be between \$410.0 million and \$435.0 million, compared to \$480.9 million in 2019, and that adjusted diluted EPS will be between \$5.50 and \$5.95 for 2020, compared to \$6.82 for 2019. The expected decreases in adjusted EBITDA and adjusted diluted EPS result primarily from revenue mix changes in web hosting and data-driven marketing, from the secular decline in checks and from check-related contract renewals. Additionally, we plan to make incremental investments to drive revenue growth. We believe the payback from our One Deluxe strategy will be substantial over time and that investing in our existing business is the best use of our resources.

We believe that cash generated by operating activities, along with availability under our revolving credit facility, will be sufficient to support our operations for the next 12 months, including capital expenditures of approximately \$70.0 million, dividend payments, required interest payments and periodic share repurchases, as well as possible acquisitions. As of December 31, 2019, \$261.1 million was available for borrowing under our revolving credit facility. We expect to maintain a disciplined approach to capital deployment that focuses on our need to continue investing in initiatives to drive revenue growth. We anticipate that our board of directors will maintain our current dividend level. However, dividends are approved by the board of directors on a quarterly basis, and thus are subject to change. To the extent we generate excess cash, we expect to opportunistically repurchase common shares and/or reduce the amount outstanding under our credit facility. We expect that share repurchases in 2020 will be lower than in recent years while we invest in our One Deluxe strategy.

CONSOLIDATED RESULTS OF OPERATIONS

Consolidated Revenue

(in thousands, except per order amounts)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Total revenue	\$ 2,008,715	\$ 1,998,025	\$ 1,965,556	0.5%	1.7%
Orders	47,815	47,534	49,981	0.6%	(4.9%)
Revenue per order	\$ 42.01	\$ 42.03	\$ 39.33	—	6.9%

The increase in total revenue for 2019, as compared to 2018, was driven primarily by incremental revenue of approximately \$65.1 million from businesses acquired, Small Business Services price increases and an increase in Financial Services data-driven marketing volume. Information regarding our acquisitions can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. These increases in revenue were partially offset by the continuing decline in order volume for both personal and business checks, as well as forms and accessories sold by Small Business Services. In addition, Small Business Services marketing solutions and web services volume, excluding incremental revenue from businesses acquired, declined approximately \$11.0 million and \$9.0 million, respectively. Revenue was also negatively impacted during 2019 by continued check pricing pressure within Financial Services.

The increase in total revenue for 2018, as compared to 2017, was driven by incremental revenue from acquired businesses of approximately \$86.7 million, as well as Small Business Services price increases. Information regarding our acquisitions can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. These increases in revenue were partially offset by lower order volume for both personal and business checks, as well as forms and accessories sold by Small Business Services. In addition, Financial Services Deluxe Rewards revenue decreased approximately \$11.0 million due to the loss of Verizon Communications Inc. as a customer in late 2017, Small Business Services search and email marketing volume decreased approximately \$6.0 million due to the loss of a customer, and revenue was negatively impacted by continued check pricing pressure within Financial Services.

Service revenue represented 29.8% of total revenue in 2019, 27.3% in 2018 and 25.2% in 2017. As such, the majority of our revenue is generated by product sales. We do not manage our business based on product versus service revenue. Instead, we analyze our products and services based on the following categories:

	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Marketing solutions and other services (MOS):					
Small business marketing solutions	14.0%	14.6%	13.3%	(0.6) pt.	1.3 pt.
Treasury management solutions	9.6%	7.4%	5.5%	2.2 pt.	1.9 pt.
Web services	8.3%	8.1%	6.7%	0.2 pt.	1.4 pt.
Data-driven marketing solutions	7.9%	7.4%	7.7%	0.5 pt.	(0.3) pt.
Fraud, security, risk management and operational services	4.3%	4.5%	5.2%	(0.2) pt.	(0.7) pt.
Total MOS	44.1%	42.0%	38.4%	2.1 pt.	3.6 pt.
Checks	39.0%	40.6%	43.3%	(1.6) pt.	(2.7) pt.
Forms, accessories and other products	16.9%	17.4%	18.3%	(0.5) pt.	(0.9) pt.
Total revenue	100.0%	100.0%	100.0%	—	—

The number of orders increased slightly in 2019, as compared to 2018, due primarily to the growth in MOS, including the impact of acquisitions, partially offset by the continuing secular decline in check and forms usage. Revenue per order remained virtually unchanged in 2019, as compared to 2018, as the benefit of Small Business Services price increases and the mix of product and service revenue in each period were offset by the negative impact of continued check pricing pressure in Financial Services.

The number of orders decreased in 2018, as compared to 2017, driven by the continuing secular decline in check and forms usage, partially offset by the impact of our acquisitions. Revenue per order increased in 2018, as compared to 2017, primarily due to the benefit of price increases and favorable product and service mix, partially offset by the impact of continued check pricing pressure in Financial Services.

Consolidated Cost of Revenue

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Total cost of revenue	\$ 812,935	\$ 791,748	\$ 742,707	2.7%	6.6%
Total cost of revenue as a percentage of total revenue	40.5%	39.6%	37.8%	0.9 pt.	1.8 pt.

Cost of revenue consists primarily of raw materials used to manufacture our products, shipping and handling costs, third-party costs for outsourced products and services, payroll and related expenses, information technology costs, depreciation and amortization of assets used in the production process and in support of digital service offerings, and related overhead.

The increase in total cost of revenue for 2019, as compared to 2018, was primarily attributable to incremental costs of businesses acquired of approximately \$32.9 million, as well as increased shipping and material rates and an increase in medical costs of approximately \$5.0 million in 2019. In addition, restructuring and integration expense increased \$2.1 million in 2019. Partially offsetting these increases in total cost of revenue was the impact of the lower order volume for both personal and business checks, as well as forms and accessories sold by Small Business Services. In addition, manufacturing efficiencies and other benefits resulting from our continued cost reduction initiatives resulted in a reduction in total cost of revenue of approximately \$10.0 million. Total cost of revenue as a percentage of total revenue increased as compared to 2018, due in large part to the increase in service revenue, including the impact of acquisitions, as well as the increase in shipping, materials, medical, restructuring and integration costs, partially offset by Small Business Services price increases.

The increase in total cost of revenue for 2018, as compared to 2017, was primarily attributable to the increase in revenue, including incremental costs of acquired businesses of \$40.5 million, as well as unfavorable product mix and increased shipping and material rates in 2018. Partially offsetting these increases in total cost of revenue was the impact of lower order volume for both personal and business checks, as well as forms and accessories sold by Small Business Services. In addition, total cost of revenue decreased due to manufacturing efficiencies and other benefits resulting from our continued cost reduction initiatives of approximately \$15.0 million. Total cost of revenue as a percentage of total revenue increased in 2018, as compared to 2017, due in large part to the impact of acquisitions, as well as the increase in service revenue.

Consolidated Selling, General & Administrative (SG&A) Expense

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
SG&A expense	\$ 891,693	\$ 854,000	\$ 830,231	4.4%	2.9%
SG&A expense as a percentage of total revenue	44.4%	42.7%	42.2%	1.7 pt.	0.5 pt.

The increase in SG&A expense for 2019, as compared to 2018, was driven by incremental costs of \$27.5 million from businesses acquired, including acquisition amortization, as well as investments in our transformation to One Deluxe, an increase in the Small Business Services commission rate on customer referrals, an increase of \$7.0 million in share-based compensation expense, driven by an increase in the level of equity awards in 2019, a \$6.5 million increase in medical costs, increased sales incentives in our data-driven marketing business and an increase in legal-related expenses of approximately \$4.0 million. Also, during 2018, we recognized gains from sales of businesses and customer lists within Small Business Services of \$15.6 million. Further information regarding these asset sales can be found under the caption "Note 3: Supplemental balance sheet and cash flow information" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. These increases in SG&A expense were partially offset by various expense reduction initiatives of approximately \$40.0 million. Also, amortization expense related to acquisitions completed prior to 2018 decreased approximately \$14.5 million in 2019, as compared to 2018.

The increase in SG&A expense for 2018, as compared to 2017, was driven by incremental costs of acquired businesses of approximately \$39.4 million, innovation investments, Small Business Services legal costs of \$10.5 million related to certain resolved litigation matters, a higher average Small Business Services commission rate and Chief Executive Officer (CEO) transition costs of \$7.2 million in 2018. These increases in SG&A expense were partially offset by various expense reduction initiatives of approximately \$35.0 million, primarily within our sales and marketing organizations, and decreases in incentive compensation and medical costs of approximately \$5.0 million each. Also, during 2018, we recognized gains from sales of businesses and customer lists within Small Business Services of \$15.6 million, compared to gains recognized in 2017 of \$8.7 million. Further information regarding these asset sales can be found under the caption "Note 3: Supplemental balance sheet and cash flow information" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

Restructuring and Integration Expense

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Restructuring and integration expense	\$ 71,248	\$ 19,737	\$ 8,562	\$ 51,511	\$ 11,175

Our restructuring and integration activities increased in each of the last 2 years, as we are currently pursuing several initiatives designed to focus our business behind our growth strategy and to increase our efficiency. In addition to the expense shown here, restructuring and integration expense of \$3.6 million in 2019, \$1.5 million in 2018 and \$0.6 million in 2017 was included within total cost of revenue on our consolidated statements of (loss) income. Further information can be found under *Restructuring, Integration and Other Costs*.

Asset Impairment Charges

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Asset impairment charges	\$ 390,980	\$ 101,319	\$ 54,880	\$ 289,661	\$ 46,439

During the third quarter of 2019, we recorded pretax asset impairment charges of \$391.0 million related to goodwill and certain trade name, customer list and technology intangible assets. Further information regarding these charges can be found under the caption "Note 8: Fair value measurements" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

During the third quarter of 2018, we recorded pretax asset impairment charges of \$99.2 million related to goodwill and an indefinite-lived trade name, as well as certain customer list intangible assets. During the first quarter of 2018, we recorded a pretax asset impairment charge of \$2.1 million related to an additional customer list intangible asset. Further information regarding these charges can be found under the caption "Note 8: Fair value measurements" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

During the third quarter of 2017, we recorded pretax asset impairment charges of \$46.6 million related to goodwill, the discontinued NEBS trade name and other non-current assets, primarily internal-use software. Further information regarding these charges can be found under the caption "Note 8: Fair value measurements" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. Also during 2017, we recorded pretax asset impairment charges of \$8.3 million related to a small business distributor that was sold during the second quarter of 2017. Further information regarding these charges can be found in the discussion of assets held for sale under the caption "Note 3: Supplemental balance sheet and cash flow information" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

Interest Expense

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Interest expense	\$ 34,682	\$ 27,112	\$ 21,359	27.9%	26.9%
Weighted-average debt outstanding	925,715	796,667	754,289	16.2%	5.6%
Weighted-average interest rate	3.54%	3.21%	2.55%	0.33 pt.	0.66 pt.

The increase in interest expense for 2019, as compared to 2018, was driven primarily by our higher weighted-average debt level that funded share repurchases throughout 2019 and 2018 and acquisitions throughout 2018, as well as our higher weighted-average interest rate during 2019.

The increase in interest expense for 2018, as compared to 2017, was primarily driven by our higher weighted-average interest rate during 2018, as well as the higher weighted-average debt level used to fund share repurchases and acquisitions.

Income Tax Provision

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Income tax provision	\$ 14,267	\$ 63,001	\$ 82,672	(77.4%)	(23.8%)
Effective tax rate	(7.7%)	29.6%	26.4%	(37.3) pt.	3.2 pt.

The decrease in our effective income tax rate for 2019, as compared to 2018, was driven primarily by the nondeductible portion of the goodwill impairment charges in each period, combined with the impact of the asset impairment charges on pretax (loss) income in each period. The larger non-deductible goodwill impairment charge in 2019 resulted in a decrease in our effective tax rate of 36.4 points, as compared to 2018. In addition, during the third quarter of 2019, we placed a full valuation allowance of \$8.4 million on the intangible-related deferred tax asset generated by the impairment of intangible assets located in Australia, decreasing our tax rate 4.5 points. Partially offsetting these decreases in our effective income tax rate was an increase in our state income tax rate of 1.9 points, as compared to 2018, as well as a benefit of 0.8 points in 2018 related to our accounting for the Tax Cuts and Jobs Act (the "2017 Tax Act"). Further information regarding our effective tax rate for 2019, as compared to 2018, can be found under the caption "Note 11: Income tax provision" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. We anticipate that our effective income tax rate for 2020 will be approximately 25%.

Effective January 1, 2018, federal tax reform under the 2017 Tax Act lowered the federal statutory tax rate by 14.0 points. Despite this decrease in the statutory tax rate, our effective tax rate increased for 2018, as compared to 2017, for several reasons, including the one-time impact of the 2017 Tax Act in 2017, which lowered our 2017 effective tax rate 6.6 points; the impact of the larger non-deductible goodwill impairment charge in 2018, which increased our tax rate 5.6 points as compared to 2017; the elimination of the qualified production activities deduction for 2018; favorable adjustments in 2017 related to the tax basis in a small business distributor that was sold; a lower federal benefit of state income taxes due to a lower federal tax rate; and a lower benefit from the tax effects of share-based compensation. A comparison of our effective tax rate for 2018, as compared to 2017, can be found under the caption "Note 11: Income tax provision" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

Diluted (Loss) Earnings per Share

	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Diluted (loss) earnings per share	\$ (4.65)	\$ 3.16	\$ 4.72	(247.2%)	(33.1%)
Adjusted diluted EPS ⁽¹⁾	6.82	6.88	6.18	(0.9%)	11.3%

⁽¹⁾ Information regarding the calculation of adjusted diluted EPS can be found in the following section, *Reconciliation of Non-GAAP Financial Measures*.

The change in diluted loss per share for 2019, as compared to diluted EPS for 2018, was driven primarily by the increase in asset impairment charges of \$289.7 million, an increase in restructuring, integration and other costs of \$58.3 million in support of our growth strategies and to increase our efficiency, and continued volume reductions in personal and business checks and forms, due primarily to the secular decline in check and forms usage. Additionally, we made investments in our transformation to One Deluxe, shipping and material rates increased in 2019, medical costs increased approximately \$11.5 million, interest expense increased \$7.6 million, organic Small Business Services marketing solutions and web services revenue declined, and the Small Business Services commission rate on customer referrals increased. Additionally, share-based compensation increased \$6.3 million, driven by an increase in the level of equity awards in 2019, and check pricing pressure within Financial Services continued. We also recognized gains from sales of businesses and customer lists within Small Business Services of \$15.6 million in 2018 and our effective income tax rate was unfavorable in 2019, driven in large part by the higher goodwill impairment charges in 2019. These increases in diluted loss per share were partially offset by lower shares outstanding in 2019, a benefit of approximately \$50.0 million from continuing initiatives to reduce our cost structure, the benefit of Small Business Services price increases, a decrease in amortization expense related to acquisitions completed prior to 2018 and incremental earnings from businesses acquired.

The decrease in adjusted diluted EPS for 2019, as compared to 2018, was driven primarily by the continuing decline in checks, forms and accessories, investments in our transformation to One Deluxe, increased shipping and material rates, increased medical costs and interest expense, lower organic Small Business Services marketing solutions and web services revenue, a higher Small Business Services commission rate on customer referrals and continued check pricing pressure within Financial Services. These decreases in adjusted diluted EPS were partially offset by lower shares outstanding in 2019, benefits from our cost reduction initiatives, Small Business Services price increases and incremental earnings from businesses acquired.

The decrease in diluted EPS for 2018, as compared to 2017, was driven primarily by the increase in asset impairment charges of \$46.4 million, volume reductions in personal and business checks and forms, due primarily to the secular decline in check and forms usage, and an increase in restructuring, integration and other costs of \$12.1 million in support of our growth strategies and to increase our efficiency. Additionally, Deluxe Rewards revenue decreased, driven primarily by the loss of Verizon Communications Inc. as a customer in late 2017, Small Business Services legal costs increased due to certain resolved litigation matters, the Small Business Services commission rate increased, we incurred CEO transition costs of \$7.2 million in 2018 and check pricing pressure within Financial Services continued. Also, our effective income tax rate was higher in 2018, as compared to 2017, driven primarily by the tax impact of the higher goodwill impairment charge in 2018. Partially offsetting these decreases in diluted EPS were continuing initiatives to reduce our cost structure, primarily within our sales, marketing and fulfillment organizations, the benefit of Small Business Services price increases, lower shares outstanding in 2018, as compared to 2017,

and lower medical and incentive compensation expense. In addition, we recognized gains from sales of businesses and customer lists within Small Business Services of \$15.6 million in 2018, compared to gains of \$8.7 million in 2017.

The increase in adjusted diluted EPS for 2018, as compared to 2017, was driven primarily by continuing initiatives to reduce our cost structure, primarily within our sales, marketing and fulfillment organizations, the benefit of Small Business Services price increases and lower medical and incentive compensation expense in 2018. Additionally, our effective income tax rate was lower in 2018, excluding the impact of the 2017 Tax Act and the goodwill impairment charges in both years, and shares outstanding were lower in 2018, as compared to 2017. Partially offsetting these increases in adjusted diluted EPS were volume reductions in personal and business checks and forms, the decline in Deluxe Rewards revenue, the increase in the Small Business Services commission rate and continued check pricing pressure within Financial Services.

Reconciliation of Non-GAAP Financial Measures

Note that we have not reconciled adjusted EBITDA or adjusted diluted EPS outlook guidance for 2020 to the directly comparable GAAP financial measure because we do not provide outlook guidance for net income or GAAP diluted EPS or the reconciling items between net income, adjusted EBITDA and GAAP diluted EPS. Because of the substantial uncertainty and variability surrounding certain of these forward-looking reconciling items, including asset impairment charges, restructuring, integration and other costs, and certain legal-related expenses, a reconciliation of the non-GAAP financial measure outlook guidance to the corresponding GAAP measure is not available without unreasonable effort. The probable significance of certain of these items is high and, based on historical experience, could be material.

Adjusted diluted EPS – By excluding the impact of non-cash items or items that we believe are not indicative of ongoing operations, we believe that adjusted diluted EPS provides useful comparable information to assist in analyzing our current period operating performance and in assessing our future operating performance. As such, adjusted diluted EPS is one of the key financial performance metrics we use to assess the operating results and performance of the business and to identify strategies to improve performance. It is reasonable to expect that one or more of the excluded items will occur in future periods, but the amounts recognized may vary significantly.

Diluted (loss) earnings per share reconciles to adjusted diluted EPS as follows:

(in thousands, except per share amounts)	Year Ended December 31,		
	2019	2018	2017
Net (loss) income	\$ (199,897)	\$ 149,630	\$ 230,155
Asset impairment charges	390,980	101,319	54,880
Acquisition amortization	70,720	78,577	74,944
Restructuring, integration and other costs	79,511	21,203	9,130
CEO transition costs ⁽¹⁾	9,390	7,210	—
Share-based compensation expense	19,138	11,689	15,109
Acquisition transaction costs	215	1,719	2,342
Certain legal-related expense	6,420	10,502	—
Loss (gain) on sales of businesses and customer lists	124	(15,641)	(8,703)
Loss on debt retirement	—	453	—
Adjustments, pre-tax	576,498	217,031	147,702
Income tax provision impact of pre-tax adjustments ⁽²⁾	(81,868)	(39,715)	(56,024)
Impact of federal tax reform	—	(1,700)	(20,500)
Adjustments, net of tax	494,630	175,616	71,178
Adjusted net income	\$ 294,733	\$ 325,246	\$ 301,333
GAAP Diluted EPS	\$ (4.65)	\$ 3.16	\$ 4.72
Adjustments, net of tax	11.47	3.72	1.46
Adjusted Diluted EPS ⁽³⁾	\$ 6.82	\$ 6.88	\$ 6.18

⁽¹⁾ Includes share-based compensation expense related to the modification of certain awards in conjunction with our CEO transition.

⁽²⁾ The tax effect of the pretax adjustments considers the tax treatment and related tax rate(s) that apply to each adjustment in the applicable tax jurisdiction(s). Generally, this results in a tax impact that approximates the U.S. effective tax rate for each adjustment. However, the tax impact of certain adjustments, such as asset impairment charges, share-based compensation expense and CEO transition costs, depends on whether the amounts are deductible in the respective tax jurisdictions and the applicable effective tax rate(s) in those jurisdictions.

⁽³⁾ The total of weighted-average shares and potential common shares outstanding used in the calculation of adjusted diluted EPS for 2019 was 158 thousand shares higher than that used in the GAAP diluted EPS calculation. Because of our net loss in 2019, the GAAP calculation includes no impact for potential common shares because their effect would have been antidilutive.

Adjusted EBITDA – We believe that adjusted EBITDA is useful in evaluating our operating performance, as the calculation eliminates the effect of interest expense, income taxes, the accounting effects of capital investments (i.e., depreciation and amortization) and certain items, as presented below, that may vary for companies for reasons unrelated to overall operating performance. In addition, management utilizes adjusted EBITDA to assess the operating results and performance of the business, to perform analytical comparisons and to identify strategies to improve performance. We also believe that an increasing adjusted EBITDA depicts increased ability to attract financing and an increase in the value of the company. We do not consider adjusted EBITDA to be a measure of cash flow, as it does not consider certain cash requirements such as interest, income taxes or debt service payments.

Net (loss) income reconciles to adjusted EBITDA as follows:

(in thousands)	Year Ended December 31,		
	2019	2018	2017
Net (loss) income	\$ (199,897)	\$ 149,630	\$ 230,155
Interest expense	34,682	27,112	21,359
Income tax provision	14,267	63,001	82,672
Depreciation and amortization expense	126,036	131,100	122,652
Asset impairment charges	390,980	101,319	54,880
Restructuring, integration and other costs	79,511	21,203	9,130
CEO transition costs ⁽¹⁾	9,390	7,210	—
Share-based compensation expense	19,138	11,689	15,109
Acquisition transaction costs	215	1,719	2,342
Certain legal-related expense	6,420	10,502	—
Loss (gain) on sales of businesses and customer lists	124	(15,641)	(8,703)
Loss on debt retirement	—	453	—
Adjusted EBITDA	\$ 480,866	\$ 509,297	\$ 529,596

⁽¹⁾ Includes share-based compensation expense related to the modification of certain awards in conjunction with our CEO transition.

RESTRUCTURING, INTEGRATION AND OTHER COSTS

Restructuring and integration expense consists of costs related to the consolidation and migration of certain applications and processes, including our financial, sales and human resources management systems. It also includes costs related to the integration of acquired businesses into our systems and processes. These costs primarily consist of information technology consulting and project management services and internal labor, as well as other miscellaneous costs associated with our initiatives, such as training, travel and relocation. In addition, we recorded employee severance costs related to these initiatives, as well as our ongoing cost reduction initiatives, across functional areas. Our restructuring and integration activities increased in 2019, as we are currently pursuing several initiatives designed to focus our business behind our growth strategy and to increase our efficiency. Further information regarding restructuring and integration expense can be found under the caption "Note 9: Restructuring and integration expense" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. In addition to restructuring and integration expense, we also recognized certain business transformation costs related to optimizing our business processes in line with our growth strategies. These costs totaled \$4.7 million in 2019. As discussed in *Executive Overview*, we plan to invest approximately \$70.0 million in 2020 to build out our technology platforms, consisting of capitalized cloud computing implementation costs and expense items. We plan to fund a large portion of these investments through structural cost savings.

The majority of the employee reductions included in our restructuring and integration accruals are expected to be completed in the first quarter of 2020, and we expect most of the related severance payments to be paid by the third quarter of 2020. As a result of our employee reductions, we realized cost savings of approximately \$15.0 million in SG&A expense and \$2.0 million in total cost of revenue in 2019, in comparison to our 2018 results of operations, which represents a portion of the total net cost reductions we realized in 2019. For those employee reductions included in our restructuring and integration accruals as of December 31, 2019, we expect to realize cost savings of approximately \$2.0 million in total cost of revenue and \$2.0 million in SG&A expense in 2020, in comparison to our 2019 results of operations, which represents a portion of the total net cost reductions we expect to realize in 2020.

CEO TRANSITION COSTS

In April 2018, we announced the retirement of Lee Schram, our former CEO. Mr. Schram remained employed under the terms of a transition agreement through March 1, 2019. Under the terms of this agreement, we provided certain benefits to Mr. Schram, including a transition bonus in the amount of \$2.0 million that was paid in March 2019. In addition, modifications were made to certain of his share-based payment awards. In conjunction with the CEO transition, we offered retention agreements to certain members of our management team under which each employee was entitled to receive a cash bonus equal to his or her annual base salary or up to 1.5 times his or her annual base salary if he or she remained employed during the retention period, generally from July 1, 2018 to December 31, 2019, and complied with certain covenants. In addition to these expenses, we incurred certain other costs related to the CEO transition process, including executive search, legal, travel and board of directors fees in 2018. During 2019, we incurred consulting fees related to the evaluation of our strategic plan and we expensed the majority of the current CEO's signing bonus. CEO transition costs are included in SG&A expense on the consolidated statements of (loss) income and were \$9.4 million for 2019 and \$7.2 million for 2018. The majority of the remaining management retention bonuses were paid in early 2020. Accruals for CEO transition costs were included within accrued liabilities on the consolidated balance sheet and were \$4.4 million as of December 31, 2019.

SEGMENT RESULTS

Additional financial information regarding our business segments appears under the caption "Note 19: Business segment information" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

Small Business Services

Results for our Small Business Services segment were as follows:

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Total revenue	\$ 1,255,779	\$ 1,283,620	\$ 1,239,739	(2.2%)	3.5%
Operating (loss) income	(124,235)	119,808	181,528	(203.7%)	(34.0%)
Operating margin	(9.9%)	9.3%	14.6%	(19.2) pt.	(5.3) pt.

The decrease in total revenue for 2019, as compared to 2018, was driven by lower order volume, primarily related to checks, forms and accessories, as secular check and forms usage continues to decline. Small business marketing solutions volume also decreased approximately \$11.0 million due to the loss of a large customer and a decline in promotional products, and web services volume decreased approximately \$9.0 million, excluding the effect of 2018 acquisitions, due primarily to a reduction in search and email marketing and web hosting volume. In addition, revenue was negatively impacted \$4.3 million by foreign currency exchange rate changes. These decreases in revenue were partially offset by the benefit of price increases and incremental revenue of approximately \$16.1 million from businesses acquired in 2018. Information about our acquisitions can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

The operating loss for 2019, as compared to operating income for 2018, was driven primarily by an increase in asset impairment charges of \$174.1 million. The higher charges resulted in a 14.0 point reduction in operating margin in 2019, as compared to 2018. Further information regarding the asset impairment charges can be found under the caption "Note 8: Fair value measurements" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. In addition, operating loss increased due to a \$41.8 million increase in restructuring, integration and other costs in support of our growth strategies and to increase our efficiency, as well as the lower order volume for checks, forms, accessories, marketing solutions and web services. Also contributing to the increase in operating loss was investments in our transformation to One Deluxe, an increase in the commission rate on customer referrals, increased medical costs, higher material and shipping rates and a \$2.8 million increase in share-based compensation, driven by an increase in the level of equity awards in 2019. Also, during 2018, we recognized gains from sales of businesses and customer lists of \$15.6 million. Further information regarding these asset sales can be found under the caption "Note 3: Supplemental balance sheet and cash flow information" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. Partially offsetting these increases in operating loss was the benefit of price increases, benefits of our cost reduction initiatives and lower legal-related expenses in 2019, as we recorded \$10.5 million of expense in 2018 related to certain resolved litigation matters. Additionally, acquisition amortization decreased \$5.6 million compared to 2018.

The increase in total revenue for the 2018, as compared to 2017, was driven by incremental revenue from acquired businesses of approximately \$53.5 million and the benefit of price increases. Information about our acquisitions can be found

under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. These increases in revenue were partially offset by lower order volume, primarily related to checks, forms and accessories, as secular check and forms usage continues to decline. Search and email marketing volume also decreased approximately \$6.0 million due to the loss of a customer.

The decreases in operating income and operating margin for 2018, as compared to 2017, were primarily driven by an increase in asset impairment charges of \$44.6 million. The higher charges resulted in a 3.3 point reduction in operating margin in 2018, compared to 2017. Further information regarding the asset impairment charges can be found under the caption "Note 8: Fair value measurements" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. In addition, operating income decreased due to lower order volume for checks, forms and accessories, driven by the continuing secular decline in check and forms usage, as well as higher commission, material and shipping rates in 2018, innovation investments, legal costs of \$10.5 million related to certain resolved litigation matters, and a \$5.5 million increase in restructuring and integration expense. Also, \$4.0 million of our CEO transition costs were allocated to this segment in 2018. Partially offsetting these decreases in operating income and operating margin were price increases, benefits of our cost reduction initiatives and lower incentive compensation and medical costs. In addition, we recognized gains from sales of businesses and customer lists in 2018 of \$15.6 million, compared to gains of \$8.7 million in 2017. Further information regarding these asset sales can be found under the caption "Note 3: Supplemental balance sheet and cash flow information" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. The results of acquired businesses contributed operating income of \$3.6 million for 2018, including acquisition-related amortization, but resulted in a 0.5 point decrease in operating margin.

Financial Services

Results for our Financial Services segment were as follows:

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Total revenue	\$ 633,498	\$ 586,967	\$ 585,275	7.9%	0.3%
Operating (loss) income	(67,524)	69,939	101,047	(196.5%)	(30.8%)
Operating margin	(10.7%)	11.9%	17.3%	(22.6) pt.	(5.4) pt.

The increase in total revenue for 2019, as compared to 2018, was driven by incremental treasury management revenue of approximately \$49.1 million from businesses acquired. Information regarding our acquisitions can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. In addition, data-driven marketing volume increased. Partially offsetting these increases in revenue was lower check order volume, due primarily to the continued secular decline in check usage, as well as a decrease in treasury management volume of approximately \$3.6 million for 2019, excluding the incremental revenue from acquisitions, due to a customer electing to bring its services in-house and a reduction in software maintenance revenue. In addition, revenue was negatively affected by continued check pricing pressure.

The operating loss for 2019, as compared to operating income for 2018, was primarily due to an increase in asset impairment charges of \$115.5 million. The higher charges resulted in an 18.2 point reduction in operating margin in 2019, as compared to 2018. Further information regarding the asset impairment charges can be found under the caption "Note 8: Fair value measurements" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. In addition, operating loss increased due to a \$12.2 million increase in restructuring, integration and other costs in support of our growth strategies and to increase our efficiency, as well as lower check order volume, investments in our transformation to One Deluxe, a \$5.0 million increase in legal-related expenses in 2019, increased medical costs, higher material and shipping rates, a \$4.4 million increase in share-based compensation, driven by an increase in the level of equity awards in 2019, and continued check pricing pressure. Partially offsetting these increases in operating loss were benefits of our continuing cost reduction initiatives and a contribution of approximately \$4.4 million from businesses acquired, including acquisition amortization.

The increase in total revenue for 2018, as compared to 2017, was driven by increased treasury management solutions revenue, including incremental revenue from acquired businesses of approximately \$33.2 million. Information about our acquisitions can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. This increase in revenue was partially offset by lower check order volume due to the continued secular decline in check usage. In addition, Deluxe Rewards revenue decreased approximately \$11.0 million due to the loss of Verizon Communications Inc. as a customer in late 2017, and revenue was negatively impacted by continued check pricing pressure.

The decreases in operating income and operating margin for 2018, as compared to 2017, were primarily due to lower check order volume, the impact of the decline in Deluxe Rewards revenue, continued check pricing pressure, innovation investments, increased material and shipping rates in 2018 and factors affecting the profitability of our data-driven marketing offerings. In addition, restructuring and integration expense was \$5.7 million higher than in 2017, driven by the integration of acquired businesses and the consolidation of information technology systems, and \$3.0 million of our CEO transition costs were

allocated to this segment in 2018. Partially offsetting these decreases in operating income and operating margin in 2018 were benefits of our continuing cost reduction initiatives and lower incentive compensation and medical costs. While acquired businesses contributed approximately \$3.1 million to operating income in 2018, including acquisition-related amortization, operating margin decreased 0.3 points for 2018 due to acquired businesses.

Direct Checks

Results for our Direct Checks segment were as follows:

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Total revenue	\$ 119,438	\$ 127,438	\$ 140,542	(6.3%)	(9.3%)
Operating income	33,618	41,474	46,601	(18.9%)	(11.0%)
Operating margin	28.1%	32.5%	33.2%	(4.4) pt.	(0.7) pt.

The decrease in revenue in each of the past 2 years was primarily due to the reduction in orders stemming from the continuing secular decline in check usage.

The decreases in operating income and operating margin for 2019, as compared to 2018, were due primarily to the revenue decline, as well as a \$4.3 million increase in restructuring, integration and other costs in support of our growth strategies and to increase our efficiency, increased medical costs and increased material and shipping rates in 2019. These decreases in operating income and operating margin were partially offset by benefits from our cost reduction initiatives, including lower advertising expense driven by advertising print reduction initiatives.

The decreases in operating income and operating margin for 2018, as compared to 2017, were due primarily to the lower order volume and increased shipping rates in 2018. These decreases in operating income and operating margin were partially offset by benefits from our cost reduction initiatives, including lower advertising expense driven by advertising print reduction initiatives, as well as lower incentive compensation and medical costs.

CASH FLOWS AND LIQUIDITY

As of December 31, 2019, we held cash and cash equivalents of \$73.6 million and cash and cash equivalents included in funds held for customers of \$101.2 million. The following table shows our cash flow activity for the past 3 years, and should be read in conjunction with the consolidated statements of cash flows appearing in Part II, Item 8 of this report.

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Net cash provided by operating activities	\$ 286,653	\$ 339,315	\$ 338,431	\$ (52,662)	\$ 884
Net cash used by investing activities	(75,751)	(275,414)	(180,891)	199,663	(94,523)
Net cash used by financing activities	(186,794)	(39,825)	(182,956)	(146,969)	143,131
Effect of exchange rate change on cash, cash equivalents, restricted cash and restricted cash equivalents	5,444	(7,636)	5,370	13,080	(13,006)
Net change in cash, cash equivalents, restricted cash and restricted cash equivalents	\$ 29,552	\$ 16,440	\$ (20,046)	\$ 13,112	\$ 36,486

The \$52.7 million decrease in net cash provided by operating activities for 2019, as compared to 2018, was due primarily to increased restructuring and integration activities in support of our growth strategies and to increase our efficiency, the continuing secular decline in check and forms usage, the payment of certain legal-related expenses, including \$12.5 million accrued in the prior year and paid in the first quarter of 2019, an increase of \$10.1 million in medical benefit payments and a \$7.3 million increase in interest payments. These decreases in operating cash flow were partially offset by benefits of our cost reduction initiatives, a \$27.5 million reduction in income tax payments in 2019, the timing of accounts receivable collections and annual billings in certain of our businesses and Small Business Services price increases.

The \$0.9 million increase in net cash provided by operating activities for 2018, as compared to 2017, was primarily due to a \$36.6 million reduction in income tax payments, the benefit of cost reduction initiatives and price increases, the timing of collections of receivables, a \$7.2 million reduction in medical benefit payments and a \$3.3 million decrease in prepaid product discount payments. These increases in operating cash flow were mostly offset by the continuing secular decline in check and forms usage, lower Financial Services Deluxe Rewards revenue, higher restructuring and integration costs in 2018, the timing of accounts payable payments and a \$6.4 million increase in interest payments.

Included in net cash provided by operating activities were the following operating cash outflows:

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Income tax payments	\$ 60,764	\$ 88,253	\$ 124,878	\$ (27,489)	\$ (36,625)
Medical benefit payments	41,714	31,610	38,806	10,104	(7,196)
Interest payments	33,227	25,910	19,465	7,317	6,445
Prepaid product discount payments	25,637	23,814	27,079	1,823	(3,265)
Performance-based compensation payments ⁽¹⁾	23,583	21,780	21,174	1,803	606
Severance payments	10,585	6,971	6,981	3,614	(10)

⁽¹⁾ Amounts reflect compensation based on total company performance.

Net cash used by investing activities for 2019 was \$199.7 million lower than in 2018, driven primarily by a decrease of \$202.7 million in payments for acquisitions. Our One Deluxe growth strategy focuses on profitable organic growth, supplemented by acquisitions, rather than being dependent on acquisitions for growth. As such, the amount paid for acquisitions in 2019 decreased significantly from 2018. Information about our acquisitions can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

Net cash used by investing activities for 2018 was \$94.5 million higher than in 2017, driven primarily by an increase of \$75.0 million in payments for acquisitions. Further information about our acquisitions can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. In addition, purchases of capital assets increased \$14.8 million, as we continued to invest in key revenue growth initiatives and order fulfillment and information technology infrastructure. We also had proceeds of \$3.5 million in 2017 from the redemption of marketable securities that were acquired as part of the acquisition of RDM Corporation in April 2017.

Net cash used by financing activities for 2019 was \$147.0 million higher than in 2018, due primarily to a net decrease in borrowings on long-term debt of \$227.6 million, as our borrowings were higher in 2018 to fund acquisitions and share repurchases. This increase in cash used by financing activities was partially offset by a decrease in share repurchases of \$81.5 million.

Net cash used by financing activities for 2018 was \$143.1 million lower than in 2017, due primarily to a net increase in borrowings on long-term debt of \$252.3 million and the net change in customer funds obligations of \$26.3 million. Partially offsetting these decreases in cash used by financing activities was a \$135.0 million increase in share repurchases and a \$3.0 million increase in payments for debt issuance costs related to the revolving credit agreement executed in March 2018.

Significant cash transactions, excluding those related to operating activities, for each period were as follows:

(in thousands)	2019	2018	2017	Change	
				2019 vs. 2018	2018 vs. 2017
Payments for common shares repurchased	\$ (118,547)	\$ (200,000)	\$ (65,000)	\$ 81,453	\$ (135,000)
Purchases of capital assets	(66,595)	(62,238)	(47,450)	(4,357)	(14,788)
Cash dividends paid to shareholders	(51,742)	(56,669)	(58,098)	4,927	1,429
Net change in debt	(26,500)	201,147	(51,165)	(227,647)	252,312
Payments for acquisitions, net of cash acquired	(11,605)	(214,258)	(139,223)	202,653	(75,035)
Employee taxes paid for shares withheld	(3,935)	(7,977)	(9,377)	4,042	1,400
Net change in customer funds obligations	12,598	20,279	(6,007)	(7,681)	26,286
Proceeds from issuing shares under employee plans	3,198	7,523	9,033	(4,325)	(1,510)

As of December 31, 2019, our foreign subsidiaries held cash and cash equivalents of \$69.0 million. Deferred income taxes have not been recognized on unremitted earnings of our foreign subsidiaries, as these amounts are intended to be reinvested indefinitely in the operations of those subsidiaries. If we were to repatriate all of our foreign cash and cash equivalents into the U.S. at one time, we estimate we would incur a foreign withholding tax liability of approximately \$3.0 million.

We anticipate that net cash generated by operating activities in 2020, along with availability under our revolving credit facility, will be sufficient to support our operations for the next 12 months, including capital expenditures of approximately \$70.0 million, dividend payments, required interest payments and periodic share repurchases, as well as possible acquisitions. We intend to focus our capital spending on key revenue growth initiatives, investments in sales and financial technology and information technology infrastructure. As of December 31, 2019, \$261.1 million was available for borrowing under our revolving credit facility. To the extent we generate excess cash, we plan to opportunistically repurchase common shares and/or reduce the amount outstanding under our credit facility agreement. We expect that share repurchases in 2020 will be lower than in recent years while we invest in our One Deluxe strategy.

CAPITAL RESOURCES

Our total debt was \$883.5 million as of December 31, 2019, a decrease of \$28.4 million from December 31, 2018. Further information concerning our outstanding debt can be found under the caption "Note 15: Debt" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. Information regarding our debt service obligations can be found under *Off-Balance Sheet Arrangements, Guarantees and Contractual Obligations*.

Our capital structure for each period was as follows:

	December 31, 2019		December 31, 2018		Change
	Amount	Period-end interest rate	Amount	Period-end interest rate	
(in thousands)					
Fixed interest rate ⁽¹⁾	\$ 200,000	3.2%	\$ 1,864	2.0%	\$ 198,136
Floating interest rate	683,500	3.0%	910,000	3.8%	(226,500)
Total debt	883,500	3.0%	911,864	3.8%	(28,364)
Shareholders' equity	570,861		915,413		(344,552)
Total capital	\$ 1,454,361		\$ 1,827,277		\$ (372,916)

⁽¹⁾ The fixed interest rate amount as of December 31, 2019 represents the amount drawn under our revolving credit facility that is subject to an interest rate swap agreement. The related interest rate includes the fixed rate under the swap of 1.798% plus the credit facility spread due on all amounts outstanding under the credit facility agreement. The fixed interest rate amount as of December 31, 2018 represents amounts outstanding under capital lease obligations. Upon adoption of Accounting Standards Update (ASU) No. 2016-02, *Leasing*, and related amendments on January 1, 2019, we reclassified our capital lease obligations, now known as finance lease obligations, to accrued liabilities and other non-current liabilities on the consolidated balance sheet.

In October 2018, our board of directors authorized the repurchase of up to \$500.0 million of our common stock. This authorization has no expiration date. During 2019, we repurchased 2.6 million shares for \$118.5 million. As of December 31, 2019, \$301.5 million remained available for repurchase under the authorization. Information regarding changes in shareholders' equity can be found in the consolidated statements of shareholders' equity appearing in Part II, Item 8 of this report.

As of December 31, 2018, we had a revolving credit facility in the amount of \$950.0 million. In January 2019, we increased the credit facility by \$200.0 million, bringing the total availability to \$1.15 billion, subject to increase under the credit agreement to an aggregate amount not exceeding \$1.425 billion. The credit facility matures in March 2023. Our quarterly commitment fee ranges from 0.175% to 0.35%, based on our leverage ratio.

Borrowings under the credit facility agreement are collateralized by substantially all of our personal and intangible property. The credit agreement governing the credit facility contains customary covenants regarding limits on levels of subsidiary indebtedness and capital expenditures, liens, investments, acquisitions, certain mergers, certain asset sales outside the ordinary course of business and change in control as defined in the agreement. The agreement also requires us to maintain certain financial ratios, including a maximum leverage ratio of 3.5 and a minimum ratio of consolidated earnings before interest and taxes to consolidated interest expense, as defined in the credit agreement, of 3.0. We were in compliance with all debt covenants as of December 31, 2019, and we expect to remain in compliance with our debt covenants throughout 2020.

As of December 31, 2019, amounts were available for borrowing under our revolving credit facility as follows:

<i>(in thousands)</i>	Total available
Revolving credit facility commitment	\$ 1,150,000
Amount drawn on revolving credit facility	(883,500)
Outstanding letters of credit ⁽¹⁾	(5,408)
Net available for borrowing as of December 31, 2019	<u>\$ 261,092</u>

⁽¹⁾ We use standby letters of credit primarily to collateralize certain obligations related to our self-insured workers' compensation claims, as well as claims for environmental matters, as required by certain states. These letters of credit reduce the amount available for borrowing under our revolving credit facility.

OTHER FINANCIAL POSITION INFORMATION

Information concerning items comprising selected captions on our consolidated balance sheets can be found under the caption "Note 3: Supplemental balance sheet and cash flow information" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

Acquisitions – The impact of acquisitions on our consolidated balance sheets can be found under the caption "Note 6: Acquisitions" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

Operating lease assets and liabilities – On January 1, 2019, we adopted ASU No. 2016-02, *Leasing*, and related amendments. Adoption of these standards had a material impact on our consolidated balance sheet, but did not have a significant impact on our consolidated statement of loss or our consolidated statement of cash flows. The most significant impact was the recognition of operating lease assets of \$50.8 million, current operating lease liabilities of \$13.6 million and non-current operating lease liabilities of \$37.4 million as of January 1, 2019. Prior periods were not restated upon adoption of these standards. Further information can be found under the caption "Note 2: New accounting pronouncements" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report.

Prepaid product discounts – Other non-current assets include prepaid product discounts that are recorded upon contract execution and are generally amortized on the straight-line basis as reductions of revenue over the related contract term. Changes in prepaid product discounts during the past 3 years can be found under the caption "Note 3: Supplemental balance sheet and cash flow information" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. Cash payments made for prepaid product discounts were \$25.6 million for 2019, \$23.8 million for 2018 and \$27.1 million for 2017.

The number of checks being written has been declining, which has contributed to increased competitive pressure when attempting to retain or acquire clients. Both the number of financial institution clients requesting prepaid product discount payments and the amount of the payments has fluctuated from year to year. Although we anticipate that we will selectively continue to make these payments, we cannot quantify future amounts with certainty. The amount paid depends on numerous factors, such as the number and timing of contract executions and renewals, competitors' actions, overall product discount levels and the structure of up-front product discount payments versus providing higher discount levels throughout the term of the contract.

Liabilities for prepaid product discounts are recorded upon contract execution. These obligations are monitored for each contract and are adjusted as payments are made. Prepaid product discounts due within the next year are included in accrued liabilities on our consolidated balance sheets. These accruals were \$14.7 million as of December 31, 2019 and \$10.9 million as of December 31, 2018. Accruals for prepaid product discounts included in other non-current liabilities on our consolidated balance sheets were \$3.7 million as of December 31, 2019 and \$12.5 million as of December 31, 2018.

OFF-BALANCE SHEET ARRANGEMENTS, GUARANTEES AND CONTRACTUAL OBLIGATIONS

It is not our general business practice to enter into off-balance sheet arrangements or to guarantee the performance of third parties. In the normal course of business we periodically enter into agreements that incorporate general indemnification language. These indemnifications encompass third-party claims arising from our products and services, including, without limitation, service failures, breach of security, intellectual property rights, governmental regulations and/or employment-related matters. Performance under these indemnities would generally be triggered by our breach of the terms of the contract. In disposing of assets or businesses, we often provide representations, warranties and/or indemnities to cover various risks, including, for example, unknown damage to the assets, environmental risks involved in the sale of real estate, liability to investigate and remediate environmental contamination at waste disposal sites and manufacturing facilities, and unidentified tax

liabilities and legal fees related to periods prior to disposition. We do not have the ability to estimate the potential liability from such indemnities because they relate to unknown conditions. However, we do not believe that any liability under these indemnities would have a material adverse effect on our financial position, annual results of operations or annual cash flows. We have recorded liabilities for known indemnifications related to environmental matters. These liabilities were not significant as of December 31, 2019 or December 31, 2018. Further information regarding our liabilities related to self-insurance and litigation can be found under the caption "Note 17: Other commitments and contingencies" in the Notes to Consolidated Financial Statements appearing in the Part II, Item 8 of this report.

We are not engaged in any transactions, arrangements or other relationships with unconsolidated entities or other third parties that are reasonably likely to have a material effect on our liquidity or on our access to, or requirements for, capital resources. We have not established any special purpose entities nor have we entered into any material related party transactions during the past 3 years.

As of December 31, 2019, our contractual obligations were as follows:

<i>(in thousands)</i>	Total	2020	2021 and 2022	2023 and 2024	2025 and thereafter
Long-term debt	\$ 883,500	\$ —	\$ —	\$ 883,500	\$ —
Purchase obligations	144,219	74,913	45,272	17,237	6,797
Operating lease obligations	50,710	13,970	19,731	7,846	9,163
Other non-current liabilities	35,805	19,351	10,888	2,393	3,173
Total contractual obligations	<u>\$ 1,114,234</u>	<u>\$ 108,234</u>	<u>\$ 75,891</u>	<u>\$ 910,976</u>	<u>\$ 19,133</u>

Purchase obligations include amounts due under contracts with third-party service providers. These contracts are primarily for information technology services, including cloud computing and professional services contracts related to the build-out of our technology platforms discussed in *Executive Overview*. Purchase obligations also include Direct Checks direct mail advertising agreements and Financial Services data agreements. We routinely issue purchase orders to numerous vendors for the purchase of inventory and other supplies. These purchase orders are not included in the purchase obligations presented here, as our business partners typically allow us to cancel these purchase orders as necessary to accommodate business needs. Of the purchase obligations included in the table above, \$78.2 million allow for early termination upon the payment of early termination fees. If we were to terminate these agreements, we would have incurred early termination fees of \$6.7 million as of December 31, 2019.

Other non-current liabilities on our consolidated balance sheets consist primarily of liabilities for uncertain tax positions, deferred compensation, prepaid product discounts and our postretirement pension plan. Of the \$32.5 million reported as other non-current liabilities on our consolidated balance sheet as of December 31, 2019, \$16.1 million is excluded from the obligations shown in the table above. The excluded amounts, including the current portion of each liability, are comprised primarily of the following:

- Payments for uncertain tax positions – Due to the nature of the underlying liabilities and the extended time frame often needed to resolve income tax uncertainties, we cannot make reliable estimates of the amount or timing of cash payments that may be required to settle these liabilities. Our liability for uncertain tax positions, including accrued interest and penalties, was \$5.1 million as of December 31, 2019, excluding tax benefits of deductible interest and the federal benefit of deductible state income tax.
- A portion of the amount due under our deferred compensation plan – Under this plan, some employees may begin receiving payments upon the termination of employment or disability, and we cannot predict when these events will occur. As such, \$3.0 million of our deferred compensation liability as of December 31, 2019 is excluded from the obligations shown in the table above.
- Other non-current liabilities which are not settled in cash, such as incentive compensation that will be settled by issuing shares of our common stock and deferred revenue.

The table of contractual obligations does not include the following:

- Benefit payments for our postretirement medical benefit plan – We have the option of paying benefits from the accumulated assets of the plan or from the general funds of the company. Additionally, we expect the plan assets to earn income over time. As such, we cannot predict when or if payments from our general funds will be required. We anticipate that we will utilize plan assets to pay a majority of our benefits during 2020. Our postretirement benefit plan was overfunded \$56.7 million as of December 31, 2019.
- Income tax payments, which are dependent upon our taxable income.

CRITICAL ACCOUNTING POLICIES

Our critical accounting policies are those that are most important to the portrayal of our financial condition and results of operations, or which place the most significant demands on management's judgment about the effect of matters that are inherently uncertain, and the impact of different estimates or assumptions could be material to our financial condition or results of operations.

Our MD&A discussion is based upon our consolidated financial statements, which have been prepared in accordance with GAAP. Our accounting policies are discussed under the caption "Note 1: Significant accounting policies" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. We review the accounting policies used in reporting our financial results on a regular basis. The preparation of our financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses and the related disclosure of contingent assets and liabilities. We base our estimates on historical experience and on various other factors and assumptions that we believe are reasonable under the circumstances, the result of which forms the basis for making judgments about the carrying values of assets and liabilities. In some instances, we reasonably could have used different accounting estimates and, in other instances, changes in the accounting estimates are reasonably likely to occur from period to period. Accordingly, actual results may differ from our estimates. Significant estimates and judgments utilized are reviewed by management on an ongoing basis and by the audit committee of our board of directors at the end of each quarter prior to the public release of our financial results.

Goodwill Impairment

As of December 31, 2019, goodwill totaled \$804.5 million, which represented 41.4% of our total assets. Goodwill is tested for impairment on an annual basis as of July 31, or more frequently if events occur or circumstances change that would indicate a possible impairment. To analyze goodwill for impairment, we must assign our goodwill to individual reporting units. Identification of reporting units includes an analysis of the components that comprise each of our operating segments, which considers, among other things, the manner in which we operate our business and the availability of discrete financial information. Components of an operating segment are aggregated to form 1 reporting unit if the components have similar economic characteristics. We periodically review our reporting units to ensure that they continue to reflect the manner in which we operate our business.

In completing the 2019 annual impairment analysis of goodwill, we elected to perform a qualitative analysis for 4 of our reporting units and a quantitative assessment for 2 of our reporting units: Financial Services Data-Driven Marketing and Small Business Services Web Services. Financial Services Data-Driven Marketing includes our businesses that provide outsourced marketing campaign targeting and execution and marketing analytics solutions. Small Business Services Web Services includes our businesses that provide hosting and domain name services, logo and web design, search engine marketing and optimization, payroll services and business incorporation and organization services.

The qualitative analyses evaluated factors, including, but not limited to, economic, market and industry conditions, cost factors and the overall financial performance of the reporting units. We also considered the quantitative analyses completed as of July 31, 2017, which indicated that the estimated fair values of the 4 reporting units exceeded their carrying values by approximate amounts between \$64.0 million and \$1.4 billion, or by amounts between 50% and 314% above the carrying values of their net assets. In completing these assessments, we noted no changes in events or circumstance that indicated that it was more likely than not that the fair value of any reporting unit was less than its carrying amount.

The quantitative analyses as of July 31, 2019 indicated that the goodwill of our Financial Services Data-Driven Marketing reporting unit was partially impaired and the goodwill of our Small Business Services Web Services reporting unit was fully impaired. As such, we recorded pretax goodwill impairment charges of \$115.5 million and \$242.3 million, respectively. Both impairment charges resulted from a combination of triggering events and circumstances, including underperformance against 2019 expectations and the original acquisition business case assumptions, driven substantially by our decision in the third quarter of 2019 to exit certain customer contracts, the loss of certain large customers in the third quarter of 2019 as they elected to in-source some of the services we provide, and the sustained decline in our stock price. The impairment charges were measured as the amount by which the reporting units' carrying values exceeded their estimated fair values, limited to the carrying amount of goodwill. After the impairment charges, \$70.9 million of goodwill remained in the Financial Services Data-Driven Marketing reporting unit.

Our impairment assessments are sensitive to changes in forecasted revenues and expenses, as well as our selected discount rate. For the Financial Services Data-Driven Marketing reporting unit, holding all other assumptions constant, if we assumed revenue in each year was 10% higher than we estimated, our impairment charge would have been approximately \$16.0 million less, and if we assumed revenue in each year was 10% lower than we estimated, our impairment charge would have been approximately \$17.0 million more. If we assumed our expenses, as a percentage of revenue, were 200 basis points lower in each year, our impairment charge would have been approximately \$28.0 million less, and if we assumed our expenses, as a percentage of revenue, were 200 basis points higher in each year, our impairment charge would have been approximately

\$30.0 million more. If we assumed our selected discount rate of 12% was 200 basis points lower, our impairment charge would have been approximately \$43.0 million less, and if we assumed the discount rate was 200 basis points higher, our impairment charge would have been approximately \$28.0 million more.

In the case of the Small Business Services Web Services reporting unit, holding all other assumptions constant, if we assumed revenue in each year was 10% higher than we estimated, our impairment charge would have been approximately \$6.0 million less. If we assumed our expenses, as a percentage of revenue, were 200 basis points lower in each year, our impairment charge would have been approximately \$35.0 million less, and if we assumed our selected discount rate of 12% was 200 basis points lower, our impairment charge would have been approximately \$12.0 million less.

In completing the quantitative analyses of goodwill, we first compared the carrying value of the reporting unit, including goodwill, to its estimated fair value. Carrying value is based on the assets and liabilities associated with the operations of the reporting unit, which often requires the allocation of shared and corporate items among reporting units. We used the income approach to calculate the estimated fair value of the reporting unit. This approach is a valuation technique under which we estimated future cash flows using the reporting unit's financial forecast from the perspective of an unrelated market participant. Using historical trending and internal forecasting techniques, we projected revenue and applied our fixed and variable cost experience rates to the projected revenue to arrive at the future cash flows. A terminal value was then applied to the projected cash flow stream. Future estimated cash flows were discounted to their present value to calculate the estimated fair value. The discount rate used was the market-value-weighted average of our estimated cost of capital derived using both known and estimated customary market metrics. In determining the estimated fair value of a reporting unit, we are required to estimate a number of factors, including market factors specific to the business, revenue growth rates, economic conditions, anticipated future cash flows, terminal growth rates, the discount rate, direct costs and the allocation of shared and corporate items. When completing a quantitative analysis for all of our reporting units, the summation of our reporting units' fair values is compared to our consolidated fair value, as indicated by our market capitalization, to evaluate the reasonableness of our calculations.

Evaluations of asset impairment require us to make assumptions about future events, market conditions and financial performance over the life of the asset being evaluated. These assumptions require significant judgment and actual results may vary from our assumptions. For example, if our stock price were to further decline over a sustained period, if a downturn in economic conditions were to negatively affect our actual and forecasted operating results, if we were to change our business strategies and/or the allocation of resources, if we were to lose significant customers, if competition were to increase, or if order volume declines for checks and forms were to materially accelerate, these situations could indicate a decline in the fair value of one or more of our reporting units. This may require us to record additional impairment charges for a portion of goodwill or other assets.

Information regarding our 2018 and 2017 impairment analyses can be found under the caption "Note 8: Fair value measurements" in the Notes to Consolidated Financial Statements included in Part II, Item 8 of this report.

Business Combinations

We allocate the purchase price of acquired businesses to the estimated fair values of the assets acquired and liabilities assumed as of the date of the acquisition. The calculations used to determine the fair value of the long-lived assets acquired, primarily intangible assets, can be complex and require significant judgment. We weigh many factors when completing these estimates, including, but not limited to, the nature of the acquired company's business; its competitive position, strengths, and challenges; its historical financial position and performance; estimated customer retention rates; discount rates; and future plans for the combined entity. We may also engage independent valuation specialists, when necessary, to assist in the fair value calculations for significant acquired long-lived assets.

We generally estimate the fair value of acquired customer lists using the multi-period excess earnings method. This valuation model estimates revenues and cash flows derived from the asset and then deducts portions of the cash flow that can be attributed to supporting assets, such as a trade name or fixed assets, that contributed to the generation of the cash flows. The resulting cash flow, which is attributable solely to the customer list asset, is then discounted at a rate of return commensurate with the risk of the asset to calculate a present value. The fair value of acquired customer lists may also be estimated by discounting the estimated cash flows expected to be generated by the assets. Assumptions used in these calculations include same-customer revenue growth rates, estimated earnings, estimated customer retention rates based on the acquirees' historical information and the discount rate.

The fair value of acquired trade names and technology is estimated, at times, using the relief from royalty method, which calculates the cost savings associated with owning rather than licensing the assets. Assumed royalty rates are applied to projected revenue for the remaining useful lives of the assets to estimate the royalty savings. Royalty rates are selected based on the attributes of the asset, including its recognition and reputation in the industry, and in the case of trade names, with consideration of the specific profitability of the products sold under a trade name and supporting assets. The fair value of acquired technology may also be estimated using the cost of reproduction method under which the primary components of the technology are identified and the estimated cost to reproduce the technology is calculated based on historical data provided by the acquiree.

The excess of the purchase price over the estimated fair value of the net assets acquired is recorded as goodwill. Goodwill is not amortized, but is subject to impairment testing on at least an annual basis.

We are also required to estimate the useful lives of the acquired intangible assets, which determines the amount of acquisition-related amortization expense we will record in future periods. Each reporting period, we evaluate the remaining useful lives of our amortizable intangibles to determine whether events or circumstances warrant a revision to the remaining period of amortization.

While we use our best estimates and assumptions, our fair value estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to 1 year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Any adjustments required after the measurement period are recorded in the consolidated statements of (loss) income.

The judgments required in determining the estimated fair values and expected useful lives assigned to each class of assets and liabilities acquired can significantly affect net income. For example, different classes of assets will have useful lives that differ. Consequently, to the extent a longer-lived asset is ascribed greater value than a shorter-lived asset, net income in a given period may be higher. Additionally, assigning a lower value to amortizable intangibles would result in a higher amount assigned to goodwill. As goodwill is not amortized, this would benefit net income in a given period, although goodwill is subject to annual impairment analysis.

Income Taxes

When preparing our consolidated financial statements, we are required to estimate our income taxes in each of the jurisdictions in which we operate. This process involves estimating our actual current tax expense based on expected taxable income, statutory tax rates, tax credits allowed in the various jurisdictions in which we operate, and risks associated with uncertain tax positions, together with assessing temporary and permanent differences resulting from the differing treatment of certain items between income tax return and financial reporting requirements. In interim reporting periods, we use an estimate of our annual effective tax rate based on the facts available at the time. Changes in the jurisdictional mix or the estimated amount of annual pretax income could impact our estimated effective tax rate for interim periods. The actual effective income tax rate is calculated at the end of the year.

We recognize deferred tax assets and liabilities for temporary differences using the enacted tax rates and laws that will be in effect when we expect the temporary differences to reverse. We must assess the likelihood that our deferred tax assets will be realized through future taxable income, and to the extent we believe that realization is not likely, we must establish a valuation allowance against those deferred tax assets. Judgment is required in evaluating our tax positions, and in determining our provision for income taxes, our deferred tax assets and liabilities and any valuation allowance recorded against our net deferred tax assets. We had net deferred tax liabilities of \$11.0 million as of December 31, 2019, including valuation allowances of \$10.3 million.

We are subject to tax audits in numerous domestic and foreign tax jurisdictions. Tax audits are often complex and can require several years to complete. In the normal course of business, we are subject to challenges from the Internal Revenue Service and other tax authorities regarding the amount of taxes due. These challenges may alter the timing or amount of taxable income or deductions, or the allocation of income among tax jurisdictions. We recognize the benefits of tax return positions in the financial statements when they are more-likely-than-not to be sustained by the taxing authorities based solely on the technical merits of the position. If the recognition threshold is met, the tax benefit is measured and recognized as the largest amount of tax benefit that, in our judgment, is greater than 50% likely to be realized. As of December 31, 2019, our liability for uncertain tax positions, including accrued interest and penalties, was \$5.1 million, excluding tax benefits of deductible interest and the federal benefit of deductible state income tax. Further information regarding our unrecognized tax benefits can be found under the caption "Note 11: Income tax provision" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. The ultimate outcome of tax matters may differ from our estimates and assumptions. Unfavorable settlement of any particular issue would require the use of cash and could result in increased income tax expense. Favorable resolution would result in reduced income tax expense.

In December 2017, U.S. tax reform was signed into law under the 2017 Tax Act. This legislation included a broad range of tax reforms, including changes to corporate tax rates, business deductions and international tax provisions. The tax effects of changes in tax laws or rates must be recognized in the period in which the law is enacted. As such, this legislation resulted in a net benefit of approximately \$20.5 million to our 2017 income tax provision. This amount included the net tax benefit from the remeasurement of deferred income taxes to the new federal statutory tax rate of 21%, which was effective for us on January 1, 2018, and revised state income tax rates for those states expected to follow the provisions of the 2017 Tax Act, partially offset by the establishment of a liability for the repatriation toll charge related to undistributed foreign earnings and profits.

When recording the impact of the 2017 Tax Act during 2017, we used reasonable estimates to determine many of the impacts, including our 2017 deferred activity and the amount of post-1986 unremitted foreign earnings subject to the repatriation toll charge. We refined our calculations throughout 2018 and recorded an additional net benefit of \$1.7 million to our 2018 income tax provision, primarily due to a reduction in the amount accrued for the repatriation toll charge.

A one-percentage-point change in our effective income tax rate would have resulted in a \$1.9 million change in income tax expense for 2019. The determination of our provision for income taxes, deferred income taxes and unrecognized tax positions requires judgment, the use of estimates, and the interpretation and application of complex tax laws. As such, the amounts reflected in our consolidated financial statements may require adjustment in the future as additional facts become known or circumstances change. If actual results differ from estimated amounts, our effective income tax rate and related tax balances would be affected.

Revenue Recognition

Effective January 1, 2018, we implemented ASU No. 2014-09, *Revenue from Contracts with Customers*, and related amendments. Under this guidance, our product revenue is recognized when control of the goods is transferred to our customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods. In most cases, control is transferred when products are shipped. We recognize the vast majority of our service revenue as the services are provided. The majority of our contracts are for the shipment of tangible products or the delivery of services that have a single performance obligation or include multiple performance obligations where control is transferred at the same time. Many of our financial institution contracts require prepaid product discounts in the form of cash payments we make to our financial institution clients. These prepaid product discounts are included in other non-current assets on our consolidated balance sheets and are generally amortized as reductions of revenue on the straight-line basis over the contract term. Sales tax collected concurrent with revenue-producing activities is excluded from revenue. Amounts billed to customers for shipping and handling are included in revenue, while the related costs incurred for shipping and handling are reflected in cost of products and are accrued when the related revenue is recognized.

When another party is involved in providing goods or services to a customer, we must determine whether our obligation is to provide the specified good or service itself (i.e., we are the principal in the transaction) or to arrange for that good or service to be provided by the other party (i.e., we are an agent in the transaction). When we are responsible for satisfying a performance obligation, based on our ability to control the product or service provided, we are considered the principal and revenue is recognized for the gross amount of consideration. When the other party is primarily responsible for satisfying a performance obligation, we are considered the agent and revenue is recognized in the amount of any fee or commission to which we are entitled. Within our Small Business Services segment, we sell certain products and services through a network of Safeguard distributors. We have determined that we are the principal in these transactions and revenue is recorded for the gross amount of consideration.

When a customer pays in advance, primarily for treasury management solutions and web hosting services, we defer the revenue and recognize it as the services are performed, generally over a period of less than 1 year. Certain of our contracts for data-driven marketing solutions and treasury management outsourcing services within Financial Services have variable consideration that is contingent on either the success of the marketing campaign ("pay-for-performance") or the volume of outsourcing services provided. We recognize revenue for estimated variable consideration as services are provided based on the most likely amount to be realized. Revenue is recognized to the extent that it is probable that a significant reversal of revenue will not occur when the contingency is resolved. Typically, the amount of consideration for these contracts is finalized within 4 months, although pricing under certain of our outsourcing contracts may be based on annual volume commitments. Revenue recognized from these contracts was approximately \$200.0 million in 2019.

Certain costs incurred to obtain contracts are required to be recognized as assets and amortized consistent with the transfer of goods or services to the customer. As such, we defer sales commissions related to obtaining check supply and treasury management solution contracts within Financial Services. These amounts are included in other non-current assets and are amortized on the straight-line basis as SG&A expense. Amortization of these amounts on the straight-line basis approximates the timing of the transfer of goods or services to the customer. Generally, these amounts are being amortized over periods of 3 to 5 years. We expense sales commissions as incurred when the amortization period would have been 1 year or less.

Accounting for customer contracts can be complex and may involve the use of various techniques to estimate total contract revenue. Estimates related to variable consideration are based on various assumptions to project the outcome of future events. We review and update our contract-related estimates regularly, and we do not anticipate that revisions to our estimates would have a material effect on our results of operations, financial position or cash flows.

New Accounting Pronouncements

Information regarding the accounting pronouncements adopted during 2019 and those not yet adopted can be found under the caption "Note 2: New accounting pronouncements" in the Notes to Consolidated Financial Statements appearing in Part II, Item 8 of this report. On January 1, 2020, we adopted ASU No. 2018-15, *Customers Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That is a Service Contract*. This standard requires the capitalization, as non-current assets, of implementation costs related to cloud computing arrangements. Previously, we expensed these costs. As discussed in *Executive Overview*, we are investing significant resources to build out our technology platforms. We anticipate that we may capitalize up to \$50.0 million of cloud computing implementation costs in 2020 related to these investments.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We are exposed to changes in interest rates primarily as a result of the borrowing activities used to support our capital structure, maintain liquidity and fund business operations. We do not enter into financial instruments for speculative or trading purposes. The nature and amount of debt outstanding can be expected to vary as a result of future business requirements, market conditions and other factors. As of December 31, 2019, our total debt was comprised of \$883.5 million drawn under our revolving credit facility at a weighted-average interest rate of 3.0%. The interest rate on the majority of the amount drawn under our revolving credit facility is variable and reflects current market rates. As such, the related carrying amount reported on the consolidated balance sheets approximates fair value. Our revolving credit facility matures in March 2023.

As part of our interest rate risk management strategy, in July 2019, we entered into an interest rate swap, which we designated as a cash flow hedge, to mitigate variability in interest payments on a portion of the amount drawn under our revolving credit facility. The interest rate swap, which terminates in March 2023 when our revolving credit facility matures, effectively converts \$200.0 million of variable rate debt to a fixed rate of 1.798%. Changes in the fair value of the interest rate swap are recorded in accumulated other comprehensive loss on the consolidated balance sheet and are subsequently reclassified into interest expense as interest payments are made on the variable-rate debt. The fair value of the interest rate swap was \$1.5 million as of December 31, 2019 and was included in other non-current liabilities on the consolidated balance sheet.

Based on the daily average amount of outstanding variable rate debt in our portfolio, a one-percentage-point change in our weighted-average interest rates would have resulted in a \$6.8 million change in interest expense for 2019.

We are exposed to changes in foreign currency exchange rates. Investments in, loans and advances to foreign subsidiaries and branches, as well as the operations of these businesses, are denominated in foreign currencies, primarily Canadian and Australian dollars. The effect of exchange rate changes is expected to have a minimal impact on our earnings and cash flows, as our foreign operations represent a relatively small portion of our business. We have not entered into hedges against changes in foreign currency exchange rates.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Deluxe Corporation

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Deluxe Corporation and its subsidiaries (the "Company") as of December 31, 2019 and 2018, and the related consolidated statements of (loss) income, of comprehensive (loss) income, of shareholders' equity and of cash flows for each of the three years in the period ended December 31, 2019, including the related notes (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2019 and 2018, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2019 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2019, based on criteria established in *Internal Control - Integrated Framework* (2013) issued by the COSO.

Change in Accounting Principle

As discussed in Note 2 to the consolidated financial statements, the Company changed the manner in which it accounts for leases in 2019.

Basis for Opinions

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

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

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

Critical Audit Matters

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

Goodwill Impairment Assessments – Financial Services Data-Driven Marketing and Small Business Services Web Services Reporting Units

As described in Notes 1, 3 and 8 to the consolidated financial statements, the Company's consolidated goodwill balance was \$804.5 million as of December 31, 2019. Management evaluates the carrying value of goodwill as of July 31 of each year and between annual evaluations if events occur or circumstances change that would indicate a possible impairment. In completing the 2019 annual impairment analysis of goodwill, management elected to perform a quantitative assessment for 2 of the Company's reporting units: Financial Services Data-Driven Marketing and Small Business Services Web Services. The quantitative analyses as of July 31, 2019 indicated that the goodwill of the Financial Services Data-Driven Marketing reporting unit was partially impaired and the goodwill of the Small Business Services Web Services reporting unit was fully impaired. As such, management recorded pretax goodwill impairment charges of \$115.5 million and \$242.3 million, respectively. When performing a quantitative analysis of goodwill, management calculates the estimated fair value of the reporting unit and compares this amount to the carrying amount of the reporting unit's net assets, including goodwill. Management uses the income approach to calculate the estimated fair value of a reporting unit. This approach is a valuation technique under which management estimates future cash flows using the reporting unit's financial forecast from the perspective of an unrelated market participant. Using historical trending and internal forecasting techniques, management projects revenue and applies their fixed and variable cost experience rates to the projected revenue to arrive at the future cash flows. A terminal value is then applied to the projected cash flow stream. Future estimated cash flows are discounted to their present value to calculate the estimated fair value. Management's discount rate is the market-value-weighted average of the Company's estimated cost of capital derived using both known and estimated customary market metrics. In determining the estimated fair values of the Company's reporting units, management is required to estimate a number of factors, including market factors specific to the business, revenue growth rates, economic conditions, anticipated future cash flows, terminal growth rates, the discount rate, direct costs and the allocation of shared and corporate items.

The principal considerations for our determination that performing procedures relating to the goodwill impairment assessments of the Financial Services Data-Driven Marketing and Small Business Services Web Services reporting units is a critical audit matter are that there was significant judgment by management when developing the fair value measurements of the reporting units, which in turn led to a high degree of auditor judgment, subjectivity and effort in performing procedures to evaluate management's cash flow projections and significant assumptions, including direct costs, the allocation of shared and corporate items and discount rate assumptions for the Financial Services Data-Driven Marketing and Small Business Services Web Services reporting units, as well as the revenue growth rate and terminal growth rate assumptions for the Financial Services Data-Driven Marketing reporting unit. In addition, the audit effort involved the use of professionals with specialized skill and knowledge.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's goodwill impairment assessment, including controls over the valuation of the Company's reporting units and development of the assumptions including direct costs, the allocation of shared and corporate items and discount rate for the Financial Services Data-Driven Marketing and Small Business Services Web Services reporting units as well as the revenue growth rate and terminal growth rate assumptions for the Financial Services Data-Driven Marketing reporting unit. These procedures also included, among others, testing management's process for developing the fair value estimates; evaluating the appropriateness of the valuation model; testing the completeness, accuracy, and relevance of underlying data used in the model; and evaluating the reasonableness of significant assumptions used by management, including direct costs, the allocation of shared and corporate items and discount rate for the Financial Services Data-Driven Marketing and Small Business Services Web Services reporting units, as well as the revenue growth rate and terminal growth rate assumptions for the Financial Services Data-Driven Marketing reporting unit. Evaluating management's assumptions related to direct costs, the allocation of shared and corporate items, revenue growth rates, and terminal growth rate assumptions involved evaluating whether the assumptions used by management were reasonable considering (i) the current and past performance of the reporting units, (ii) the consistency with external market and industry data, (iii) management's future plans, and (iv) whether these assumptions were consistent with evidence obtained in other areas of the audit. The discount rate for both reporting units was evaluated by considering the cost of capital of comparable businesses, Company specific factors and other industry factors. Professionals with specialized skill and knowledge were used to assist in the evaluation of the Company's model and certain significant assumptions, including the discount rate.

/s/ PricewaterhouseCoopers LLP
Minneapolis, Minnesota
February 21, 2020

We have served as the Company's auditor since 2001.

DELUXE CORPORATION
CONSOLIDATED BALANCE SHEETS

(in thousands, except share par value)

	December 31, 2019	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 73,620	\$ 59,740
Trade accounts receivable, net of allowances for uncollectible accounts	163,421	173,862
Inventories and supplies	39,921	46,441
Funds held for customers	117,641	100,982
Revenue in excess of billings	32,790	30,458
Other current assets	44,818	38,563
Total current assets	472,211	450,046
Deferred income taxes	3,907	2,886
Long-term investments	44,995	43,773
Property, plant and equipment, net of accumulated depreciation	96,467	90,342
Operating lease assets	44,372	—
Intangibles, net of accumulated amortization	276,122	359,965
Goodwill	804,487	1,160,626
Assets held for sale	2,880	1,350
Other non-current assets	197,870	196,108
Total assets	<u>\$ 1,943,311</u>	<u>\$ 2,305,096</u>
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$ 112,198	\$ 106,978
Funds held for customers	116,411	99,818
Accrued liabilities	179,338	184,463
Long-term debt due within one year	—	791
Total current liabilities	407,947	392,050
Long-term debt	883,500	911,073
Operating lease liabilities	33,585	—
Deferred income taxes	14,898	46,680
Other non-current liabilities	32,520	39,880
Commitments and contingencies (Notes 11, 16 and 17)		
Shareholders' equity:		
Common shares \$1 par value (authorized: 500,000 shares; outstanding: December 31, 2019 – 42,126; December 31, 2018 – 44,647)	42,126	44,647
Additional paid-in capital	4,086	—
Retained earnings	572,596	927,345
Accumulated other comprehensive loss	(47,947)	(56,579)
Total shareholders' equity	570,861	915,413
Total liabilities and shareholders' equity	<u>\$ 1,943,311</u>	<u>\$ 2,305,096</u>

See Notes to Consolidated Financial Statements

DELUXE CORPORATION
CONSOLIDATED STATEMENTS OF (LOSS) INCOME

	Year Ended December 31,		
	2019	2018	2017
<i>(in thousands, except per share amounts)</i>			
Product revenue	\$ 1,409,155	\$ 1,451,833	\$ 1,469,854
Service revenue	599,560	546,192	495,702
Total revenue	2,008,715	1,998,025	1,965,556
Cost of products	(531,307)	(547,640)	(529,638)
Cost of services	(281,628)	(244,108)	(213,069)
Total cost of revenue	(812,935)	(791,748)	(742,707)
Gross profit	1,195,780	1,206,277	1,222,849
Selling, general and administrative expense	(891,693)	(854,000)	(830,231)
Restructuring and integration expense	(71,248)	(19,737)	(8,562)
Asset impairment charges	(390,980)	(101,319)	(54,880)
Operating (loss) income	(158,141)	231,221	329,176
Interest expense	(34,682)	(27,112)	(21,359)
Other income	7,193	8,522	5,010
(Loss) income before income taxes	(185,630)	212,631	312,827
Income tax provision	(14,267)	(63,001)	(82,672)
Net (loss) income	\$ (199,897)	\$ 149,630	\$ 230,155
Basic (loss) earnings per share	\$ (4.65)	\$ 3.18	\$ 4.75
Diluted (loss) earnings per share	(4.65)	3.16	4.72

See Notes to Consolidated Financial Statements

DELUXE CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE (LOSS) INCOME

<i>(in thousands)</i>	Year Ended December 31,		
	2019	2018	2017
Net (loss) income	\$ (199,897)	\$ 149,630	\$ 230,155
Other comprehensive income (loss), net of tax:			
Postretirement benefit plans:			
Net actuarial gain (loss) arising during the year	6,594	(3,805)	7,011
Less reclassification of amounts from other comprehensive income (loss) to net (loss) income:			
Amortization of prior service credit	(1,054)	(853)	(1,049)
Amortization of net actuarial loss	2,583	1,825	2,893
Postretirement benefit plans	8,123	(2,833)	8,855
Interest rate swap:			
Unrealized loss arising during the year	(1,040)	—	—
Reclassification of realized gain on interest rate swap from other comprehensive income (loss) to net (loss) income	(57)	—	—
Interest rate swap	(1,097)	—	—
Unrealized holding gain (loss) on debt securities arising during the year	48	(1)	(109)
Unrealized foreign currency translation adjustment	1,558	(9,281)	4,028
Other comprehensive income (loss)	8,632	(12,115)	12,774
Comprehensive (loss) income	\$ (191,265)	\$ 137,515	\$ 242,929
Income tax (expense) benefit of other comprehensive income (loss) included in above amounts:			
Postretirement benefit plans:			
Net actuarial gain (loss) arising during the year	\$ (2,321)	\$ 1,339	\$ (2,465)
Less reclassification of amounts from other comprehensive income (loss) to net (loss) income:			
Amortization of prior service credit	367	568	372
Amortization of net actuarial loss	(640)	(1,059)	(744)
Postretirement benefit plans	(2,594)	848	(2,837)
Interest rate swap:			
Unrealized loss arising during the year	364	—	—
Reclassification of realized gain on interest rate swap from other comprehensive income (loss) to net (loss) income	20	—	—
Interest rate swap	384	—	—
Unrealized holding gain (loss) on debt securities arising during the year	(17)	—	38
Total net tax (expense) benefit included in other comprehensive income (loss)	\$ (2,227)	\$ 848	\$ (2,799)

See Notes to Consolidated Financial Statements

DELUXE CORPORATION
CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

<i>(in thousands)</i>	Common shares	Common shares par value	Additional paid- in capital	Retained earnings	Accumulated other comprehensive loss	Total
Balance, December 31, 2016	48,546	\$ 48,546	\$ —	\$ 882,795	\$ (50,371)	\$ 880,970
Net income	—	—	—	230,155	—	230,155
Cash dividends (\$1.20 per share)	—	—	—	(58,103)	—	(58,103)
Common shares issued	558	558	16,334	—	—	16,892
Common shares repurchased	(924)	(924)	(13,886)	(50,190)	—	(65,000)
Other common shares retired	(227)	(227)	(16,369)	—	—	(16,596)
Employee share-based compensation	—	—	13,921	—	—	13,921
Other comprehensive income	—	—	—	—	12,774	12,774
Balance, December 31, 2017	47,953	47,953	—	1,004,657	(37,597)	1,015,013
Net income	—	—	—	149,630	—	149,630
Cash dividends (\$1.20 per share)	—	—	—	(56,743)	—	(56,743)
Common shares issued	525	525	18,397	—	—	18,922
Common shares repurchased	(3,584)	(3,584)	(14,384)	(182,032)	—	(200,000)
Other common shares retired	(247)	(247)	(17,609)	—	—	(17,856)
Employee share-based compensation	—	—	13,596	—	—	13,596
Adoption of Accounting Standards Update No. 2014-09	—	—	—	4,966	—	4,966
Adoption of Accounting Standards Update No. 2018-02	—	—	—	6,867	(6,867)	—
Other comprehensive loss	—	—	—	—	(12,115)	(12,115)
Balance, December 31, 2018	44,647	44,647	—	927,345	(56,579)	915,413
Net loss	—	—	—	(199,897)	—	(199,897)
Cash dividends (\$1.20 per share)	—	—	—	(52,285)	—	(52,285)
Common shares issued	194	194	3,645	—	—	3,839
Common shares repurchased	(2,632)	(2,632)	(13,615)	(102,300)	—	(118,547)
Other common shares retired	(83)	(83)	(3,852)	—	—	(3,935)
Employee share-based compensation	—	—	17,908	—	—	17,908
Adoption of Accounting Standards Update No. 2016-02 (Note 2)	—	—	—	(267)	—	(267)
Other comprehensive income	—	—	—	—	8,632	8,632
Balance, December 31, 2019	42,126	\$ 42,126	\$ 4,086	\$ 572,596	\$ (47,947)	\$ 570,861

See Notes to Consolidated Financial Statements

DELUXE CORPORATION
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Year Ended December 31,		
(in thousands)	2019	2018	2017
Cash flows from operating activities:			
Net (loss) income	\$ (199,897)	\$ 149,630	\$ 230,155
Adjustments to reconcile net (loss) income to net cash provided by operating activities:			
Depreciation	16,502	16,572	15,868
Amortization of intangibles	109,534	114,528	106,784
Operating lease expense	19,113	—	—
Asset impairment charges	390,980	101,319	54,880
Amortization of prepaid product discounts	24,055	22,941	19,969
Deferred income taxes	(34,950)	(11,356)	(39,177)
Employee share-based compensation expense	19,702	13,378	15,109
Loss (gain) on sales of businesses and customer lists	124	(15,641)	(8,703)
Other non-cash items, net	13,220	8,030	7,708
Changes in assets and liabilities, net of effect of acquisitions:			
Trade accounts receivable	5,609	(16,795)	5,279
Inventories and supplies	4,843	(3,641)	(644)
Other current assets	(10,568)	(12,032)	(7,976)
Non-current assets	(5,360)	(6,913)	(5,710)
Accounts payable	5,130	4,366	(7,796)
Prepaid product discount payments	(25,637)	(23,814)	(27,079)
Other accrued and non-current liabilities	(45,747)	(1,257)	(20,236)
Net cash provided by operating activities	<u>286,653</u>	<u>339,315</u>	<u>338,431</u>
Cash flows from investing activities:			
Purchases of capital assets	(66,595)	(62,238)	(47,450)
Payments for acquisitions, net of cash acquired	(11,605)	(214,258)	(139,223)
Purchases of customer funds marketable securities	(7,642)	(7,807)	(7,737)
Proceeds from customer funds and corporate marketable securities	7,642	7,807	11,237
Other	2,449	1,082	2,282
Net cash used by investing activities	<u>(75,751)</u>	<u>(275,414)</u>	<u>(180,891)</u>
Cash flows from financing activities:			
Proceeds from issuing long-term debt	241,500	1,280,000	403,000
Payments on long-term debt	(268,000)	(1,078,853)	(454,165)
Net change in customer funds obligations	12,598	20,279	(6,007)
Proceeds from issuing shares under employee plans	3,198	7,523	9,033
Employee taxes paid for shares withheld	(3,935)	(7,977)	(9,377)
Payments for common shares repurchased	(118,547)	(200,000)	(65,000)
Cash dividends paid to shareholders	(51,742)	(56,669)	(58,098)
Other	(1,866)	(4,128)	(2,342)
Net cash used by financing activities	<u>(186,794)</u>	<u>(39,825)</u>	<u>(182,956)</u>
Effect of exchange rate change on cash, cash equivalents, restricted cash and restricted cash equivalents	5,444	(7,636)	5,370
Net change in cash, cash equivalents, restricted cash and restricted cash equivalents	29,552	16,440	(20,046)
Cash, cash equivalents, restricted cash and restricted cash equivalents, beginning of year	145,259	128,819	148,865
Cash, cash equivalents, restricted cash and restricted cash equivalents, end of year (Note 3)	<u>\$ 174,811</u>	<u>\$ 145,259</u>	<u>\$ 128,819</u>

See Notes to Consolidated Financial Statements

NOTE 1: SIGNIFICANT ACCOUNTING POLICIES

Nature of operations – We help enterprises, small businesses and financial institutions deepen customer relationships through trusted, technology-enabled solutions, including marketing services and data analytics, treasury management solutions, website development and hosting, promotional products and fraud solutions, as well as customized checks and forms. We are also a leading provider of checks and accessories sold directly to consumers.

Consolidation – The consolidated financial statements include the accounts of Deluxe Corporation and its wholly-owned subsidiaries. All intercompany accounts, transactions and profits have been eliminated.

Comparability – The consolidated balance sheet as of December 31, 2018 has been modified to conform to the current year presentation. The liability for funds held for customers is now presented separately. Previously, this amount was included in accrued liabilities. The investing activities section of the 2017 consolidated statement of cash flows has been modified to include proceeds from company-owned life insurance policies within the other caption. Previously, this amount was presented separately.

Use of estimates – We have prepared the accompanying consolidated financial statements in conformity with U.S. generally accepted accounting principles (GAAP). In this process, it is necessary for us to make certain estimates and assumptions affecting the amounts reported in the consolidated financial statements and related notes. Despite our intention to establish accurate estimates and to make reasonable assumptions, actual results may differ from our estimates and assumptions.

Foreign currency translation – The financial statements of our foreign subsidiaries are measured in the respective subsidiaries' functional currencies, primarily Canadian and Australian dollars, and are translated into U.S. dollars. Assets and liabilities are translated using the exchange rates in effect at the balance sheet date. Revenue and expenses are translated at the average exchange rates during the year. The resulting translation gains and losses are reflected in accumulated other comprehensive loss in the shareholders' equity section of the consolidated balance sheets. Foreign currency transaction gains and losses are recorded in other income on the consolidated statements of (loss) income.

Cash and cash equivalents – We consider all cash on hand and other highly liquid investments with original maturities of 3 months or less to be cash and cash equivalents. The carrying amounts reported in the consolidated balance sheets for cash and cash equivalents approximate fair value. Checks issued by us but not presented to the banks for payment may create negative book cash balances. These book overdrafts are included in accounts payable on the consolidated balance sheets and were not significant as of December 31, 2019 or December 31, 2018.

Trade accounts receivable – Trade accounts receivable are initially recorded at the invoiced amount upon the sale of goods or services to customers and are not interest-bearing. They are stated net of allowances for uncollectible accounts, which represent estimated losses resulting from the inability of customers to make the required payments. When determining the allowances for uncollectible accounts, we take several factors into consideration, including the overall composition of accounts receivable aging, our prior history of accounts receivable write-offs, the type of customer and our day-to-day knowledge of specific customers. Changes in the allowances for uncollectible accounts are included in selling, general and administrative (SG&A) expense on our consolidated statements of (loss) income. The point at which uncollected accounts are written off varies by type of customer, but generally does not exceed 1 year from the due date of the receivable.

Inventories and supplies – Inventories are stated at the lower of cost or net realizable value. Cost is calculated on the first-in, first-out basis. Supplies consist of items not used directly in the production of goods, such as maintenance and other supplies utilized in the production area.

Funds held for customers – Our payroll services businesses collect funds from clients to pay their payroll and related taxes. We hold these funds temporarily until payments are remitted to the clients' employees and the appropriate taxing authorities. Certain of the customer contracts for our domestic payroll processing business include legal restrictions regarding the use of these funds. In addition, our treasury management cash receipt processing business remits a portion of cash receipts to our clients the business day following receipt. All of these funds, consisting of cash and available-for-sale debt securities, are reported as funds held for customers on the consolidated balance sheets. The corresponding liability for these obligations is also reported as funds held for customers on the consolidated balance sheets. The available-for-sale debt securities are carried at fair value, with unrealized gains and losses included in accumulated other comprehensive loss on the consolidated balance sheets. Realized gains and losses are included in revenue on the consolidated statements of (loss) income and were not significant during the past 3 years.

Long-term investments – Long-term investments consist primarily of cash surrender values of company-owned life insurance policies. Certain of these policies fund amounts due under our deferred compensation plan and our inactive supplemental executive retirement plan. Further information regarding these plans can be found in Notes 13 and 14.

Property, plant and equipment – Property, plant and equipment, including leasehold and other improvements that extend an asset's useful life or productive capabilities, are stated at historical cost less accumulated depreciation. Buildings have been assigned useful lives of 40 years and machinery and equipment are generally assigned useful lives ranging from 1 year to 11 years, with a weighted-average useful life of 7 years as of December 31, 2019. Buildings are depreciated using the 150% declining balance method, and machinery and equipment is depreciated using the sum-of-the-years' digits method. Leasehold and building improvements are depreciated on the straight-line basis over the estimated useful life of the property or the life of the lease, whichever is shorter. Amortization of assets that are recorded under finance leases is included in depreciation expense. Maintenance and repairs are expensed as incurred.

Fully depreciated assets are retained in property, plant and equipment until disposal. Any gains or losses resulting from the disposition of property, plant and equipment are included in SG&A expense on the consolidated statements of (loss) income.

Leases – On January 1, 2019, we adopted Accounting Standards Update (ASU) No. 2016-02, *Leasing*, and related amendments. We adopted these standards using a modified retrospective approach and the optional transition method under which prior periods are not restated. Adoption of these standards did not have a significant impact on our consolidated statement of (loss) income or our consolidated statement of cash flows. Information regarding the impact on our consolidated balance sheet can be found in Note 2.

We determine if an arrangement is a lease at inception by considering whether a contract explicitly or implicitly identifies assets deployed in the arrangement and whether we have obtained substantially all of the economic benefits from the use of the underlying assets and direct how and for what purpose the assets are used during the term of the contract. Lease expense, as well as rent expense in 2018 and 2017, is recognized on the straight-line basis over the lease term and is included in total cost of revenue and in SG&A expense on the consolidated statements of (loss) income. Interest on finance leases, formerly known as capital leases, is included in interest expense on the consolidated statements of (loss) income.

Beginning in 2019, operating leases are included in operating lease assets, accrued liabilities and operating lease liabilities on the consolidated balance sheet. Finance leases are included in property, plant and equipment, accrued liabilities and other non-current liabilities on the consolidated balance sheet. Lease assets represent our right to use an underlying asset for the lease term and lease liabilities represent our obligation to make lease payments arising from the lease. Operating lease assets and liabilities are recognized at the commencement date based on the present value of lease payments over the lease term. As our lease agreements typically do not provide an implicit rate, we use our incremental borrowing rate, based on information available at the lease commencement date, in determining the present value of lease payments. Certain of our lease agreements include options to extend or terminate the lease. The lease term takes into account these options to extend or terminate the lease when it is reasonably certain that we will exercise the option.

Intangibles – Intangible assets are stated at historical cost less accumulated amortization. Amortization expense is generally determined on the straight-line basis, with the exception of customer lists, which are generally amortized using accelerated methods that reflect the pattern in which we receive the economic benefit of the asset. Intangibles have been assigned useful lives ranging from 1 year to 12 years, with a weighted-average useful life of 6 years as of December 31, 2019. Each reporting period, we evaluate the remaining useful lives of our amortizable intangibles to determine whether events or circumstances warrant a revision to the remaining period of amortization. If our estimate of an asset's remaining useful life is revised, the remaining carrying amount of the asset is amortized prospectively over the revised remaining useful life. Any gains or losses resulting from the disposition of intangibles are included in SG&A expense on the consolidated statements of (loss) income.

We capitalize costs of software developed or obtained for internal use, including website development costs, once the preliminary project stage has been completed, management commits to funding the project and it is probable that the project will be completed and the software will be used to perform the function intended. Capitalized costs include only (1) external direct costs of materials and services consumed in developing or obtaining internal-use software, (2) payroll and payroll-related costs for employees who are directly associated with and who devote time to the internal-use software project, and (3) interest costs incurred, when significant, while developing internal-use software. Costs incurred in populating websites with information about the company or products are expensed as incurred. Capitalization of costs ceases when the project is substantially complete and ready for its intended use. The carrying value of internal-use software is reviewed in accordance with our policy on impairment of long-lived assets and amortizable intangibles.

We incur costs in connection with the development of certain software products that we sell to our customers. Costs for the development of software products to be sold are expensed as incurred until technological feasibility is established, at which time, such costs are capitalized until the product is available for general release to customers.

Business combinations – We periodically complete business combinations that align with our business strategy. The identifiable assets acquired and liabilities assumed are recorded at their estimated fair values, and the results of operations of each acquired business are included in our consolidated statements of (loss) income from their acquisition dates. The purchase price for each acquisition is equivalent to the fair value of the consideration transferred, including any contingent consideration. Goodwill is recognized for the excess of the purchase price over the net fair value of the assets acquired and liabilities assumed. While we use our best estimates and assumptions, our fair value estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to 1 year from the acquisition date, we may record adjustments to the assets acquired and liabilities assumed, with the corresponding offset to goodwill. Any adjustments required after the measurement period are recorded in the consolidated statements of (loss) income. Transaction costs related to acquisitions are expensed as incurred and are included in SG&A expense on the consolidated statements of (loss) income.

Impairment of long-lived assets and amortizable intangibles – We evaluate the recoverability of property, plant, equipment and amortizable intangibles not held for sale whenever events or changes in circumstances indicate that an asset group's carrying amount may not be recoverable. Such circumstances could include, but are not limited to, (1) a significant decrease in the market value of an asset, (2) a significant adverse change in the extent or manner in which an asset is used or in its physical condition, or (3) an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of an asset. We compare the carrying amount of the asset group to the estimated undiscounted future cash flows associated with it. If the sum of the expected future net cash flows is less than the carrying value of the asset group being evaluated, an impairment loss is recognized. The impairment loss is calculated as the amount by which the carrying value of the asset group exceeds its estimated fair value. As quoted market prices are not available for the majority of our assets, the estimate of fair value is based on various valuation techniques, including the discounted value of estimated future cash flows. In each of the past 3 years, we recorded asset impairment charges related to certain intangible assets. Further information regarding these impairment charges can be found in Note 8.

We evaluate the recoverability of property, plant, equipment and intangibles held for sale by comparing the asset group's carrying amount with its estimated fair value less costs to sell. If the estimated fair value less costs to sell is less than the carrying value of the asset group, an impairment loss is recognized. The impairment loss is calculated as the amount by which the carrying value of the asset exceeds its estimated fair value less costs to sell. During 2017, we recorded asset impairment charges related to Small Business Services assets held for sale. Further information regarding these impairment charges can be found in Note 8.

The evaluation of asset impairment requires us to make assumptions about future cash flows over the life of the asset group being evaluated. These assumptions require judgment and actual results may differ from assumed and estimated amounts.

Impairment of goodwill and indefinite-lived intangibles – We evaluate the carrying value of goodwill and indefinite-lived intangibles as of July 31st of each year and between annual evaluations if events occur or circumstances change that would indicate a possible impairment. Such circumstances could include, but are not limited to, (1) a significant adverse change in legal factors or in business climate, (2) unanticipated competition, (3) an adverse change in market conditions that is indicative of a decline in the fair value of the assets, including the loss of a significant customer, (4) a change in our business strategy, or (5) an adverse action or assessment by a regulator. Information regarding the results of our impairment analyses can be found in Note 8.

During 2018 and 2017, we held a trade name asset that was assigned an indefinite useful life. In completing the annual impairment analysis of this asset, we elected to perform a quantitative assessment in each year. This assessment compared the carrying amount of the asset to its estimated fair value. The estimate of fair value was based on the relief from royalty method, which calculates the cost savings associated with owning rather than licensing the trade name. An assumed royalty rate was applied to forecasted revenue and the resulting cash flows were discounted. If the estimated fair value was less than the carrying value of the asset, an impairment loss was recognized for the difference. During 2018, our analysis indicated that this asset was fully impaired. Further information regarding this impairment can be found in Note 8.

To analyze goodwill for impairment, we must assign our goodwill to individual reporting units. Identification of reporting units includes an analysis of the components that comprise each of our operating segments, which considers, among other things, the manner in which we operate our business and the availability of discrete financial information. Components of an operating segment are aggregated to form 1 reporting unit if the components have similar economic characteristics. We periodically review our reporting units to ensure that they continue to reflect the manner in which we operate our business.

When completing our annual goodwill impairment analysis, we have the option to first assess qualitative factors to determine whether the existence of events or circumstances leads to a determination that it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If, after this qualitative assessment, we determine it is not more likely than not that the fair value of a reporting unit is less than its carrying amount, then performing the quantitative impairment test is unnecessary.

When performing a quantitative analysis of goodwill, we calculate the estimated fair value of the reporting unit and compare this amount to the carrying amount of the reporting unit's net assets, including goodwill. We use the income approach to calculate the estimated fair value of a reporting unit. This approach is a valuation technique under which we estimate future cash flows using the reporting unit's financial forecast from the perspective of an unrelated market participant. Using historical trending and internal forecasting techniques, we project revenue and apply our fixed and variable cost experience rates to the projected revenue to arrive at the future cash flows. A terminal value is then applied to the projected cash flow stream. Future estimated cash flows are discounted to their present value to calculate the estimated fair value. Our discount rate is the market-value-weighted average of our estimated cost of capital derived using both known and estimated customary market metrics. In determining the estimated fair values of our reporting units, we are required to estimate a number of factors, including market factors specific to the business, revenue growth rates, economic conditions, anticipated future cash flows, terminal growth rates, the discount rate, direct costs and the allocation of shared and corporate items. When completing a quantitative analysis for all of our reporting units, the summation of our reporting units' fair values is compared to our consolidated fair value, as indicated by our market capitalization, to evaluate the reasonableness of our calculations. If the carrying amount of a reporting unit's net assets exceeds its estimated fair value, an impairment loss is recorded for the difference, not to exceed the carrying amount of goodwill.

Assets held for sale – We record assets held for sale at the lower of their carrying value or estimated fair value less costs to sell. Assets are classified as held for sale on our consolidated balance sheets when all of the following conditions are met: (1) management has the authority and commits to a plan to sell the assets; (2) the assets are available for immediate sale in their present condition; (3) there is an active program to locate a buyer and the plan to sell the assets has been initiated; (4) the sale of the assets is probable within one year; (5) the assets are being actively marketed at a reasonable sales price relative to their current fair value; and (6) it is unlikely that the plan to sell will be withdrawn or that significant changes to the plan will be made. Information regarding assets held for sale can be found in Note 3.

Loans and notes receivable from distributors – We have, at times, provided loans to certain of our Safeguard® distributors to allow them to purchase the operations of other small business distributors. We have also sold distributors and customer lists that we own in exchange for notes receivable. These loans and notes receivable are included in other current assets and other non-current assets on the consolidated balance sheets. Interest is accrued at market interest rates as earned. We continually monitor the credit quality and associated risks of these receivables on an individual basis, based on criteria such as the financial stability of the distributor, historical commissions earned and their reported financial results. We generally withhold commissions payable to the distributors to settle the monthly payments due on the receivables, thus somewhat mitigating the risk that the receivables will not be collected. As of December 31, 2019 and December 31, 2018, past due amounts, allowances for credit losses and receivables placed on non-accrual status were not significant. The determination to place receivables on non-accrual status or to resume the accrual of interest is completed on a case-by-case basis, evaluating the specifics of each situation.

Prepaid product discounts – Certain of our financial institution contracts require prepaid product discounts in the form of upfront cash payments or accruals for amounts owed to financial institution clients. These prepaid product discounts are included in other non-current assets on our consolidated balance sheets and are generally amortized as reductions of revenue on the straight-line basis over the contract term. Currently, these amounts are being amortized over periods up to 14.5 years, with a weighted-average life of 6 years as of December 31, 2019. Whenever events or changes occur that impact the related contract, including significant declines in the anticipated profitability, we evaluate the carrying value of prepaid product discounts to determine if they are impaired. Should a financial institution cancel a contract prior to the agreement's termination date, or should the volume of orders realized through a financial institution fall below contractually-specified minimums, we generally have a contractual right to a refund of the remaining unamortized prepaid product discount.

Advertising costs – Deferred advertising costs include materials, printing, labor and postage costs related to direct response advertising programs of our Direct Checks and Small Business Services segments. These costs are amortized as SG&A expense over periods that correspond to the estimated revenue streams of the individual advertisements. The actual revenue streams are analyzed at least annually to monitor the propriety of the amortization periods. Judgment is required in estimating the future revenue streams, especially with regard to check re-orders, which can span an extended period of time. Significant changes in the actual revenue streams would require the amortization periods to be modified, thus impacting our results of operations during the period in which the change occurred and in subsequent periods. Within our Direct Checks segment, approximately 89% of the costs of individual advertisements is expensed within 6 months of the advertisement. The deferred advertising costs of our Small Business Services segment are fully amortized within 6 months of the advertisement. Deferred advertising costs are included in other current assets and other non-current assets on the consolidated balance sheets.

Non-direct response advertising costs are expensed as incurred. Catalogs provided to financial institution clients are accounted for as prepaid assets until they are shipped to financial institutions. The total amount of advertising expense, including direct response and non-direct response advertising, was \$70,798 in 2019, \$74,549 in 2018 and \$78,722 in 2017.

Litigation – We are party to legal actions and claims arising in the ordinary course of business. We record accruals for legal matters when the expected outcome of these matters is either known or considered probable and can be reasonably

estimated. Our accruals do not include related legal and other costs expected to be incurred in defense of legal actions. Further information regarding litigation can be found in Note 17.

Income taxes – We estimate our income tax provision based on the various jurisdictions where we conduct business. Judgment is required in determining our worldwide income tax provision. We estimate our current tax liability and record deferred income taxes resulting from temporary differences between the financial reporting basis of assets and liabilities and their respective tax reporting bases. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences reverse. Net deferred tax assets are recognized to the extent that realization of such benefits is more likely than not. To the extent that we believe realization is not likely, we establish a valuation allowance against the net deferred tax assets.

We are subject to tax audits in numerous domestic and foreign tax jurisdictions. Tax audits are often complex and can require several years to complete. In the normal course of business, we are subject to challenges from the Internal Revenue Service and other tax authorities regarding the amount of taxes due. These challenges may alter the timing or amount of taxable income or deductions, or the allocation of income among tax jurisdictions. We recognize the benefits of tax return positions in the financial statements when they are more-likely-than-not to be sustained by the taxing authorities based solely on the technical merits of the position. If the recognition threshold is met, the tax benefit is measured and recognized as the largest amount of tax benefit that, in our judgment, is greater than 50% likely to be realized. Accrued interest and penalties related to unrecognized tax positions is included in our provision for income taxes on the consolidated statements of (loss) income.

Derivative financial instruments – As of December 31, 2019, we had an outstanding interest rate swap related to amounts drawn under our revolving credit facility. We did not have any derivative instruments outstanding as of December 31, 2018. Further information regarding our derivative financial instruments can be found in Note 7.

We do not use derivative financial instruments for speculative or trading purposes. Our policy is that all derivative transactions must be linked to an existing balance sheet item or firm commitment, and the notional amount cannot exceed the value of the exposure being hedged.

We recognize all derivative financial instruments on the consolidated financial statements at fair value regardless of the purpose or intent for holding the instrument. Changes in the fair value of derivative financial instruments are recognized periodically either in income or in shareholders' equity as a component of accumulated other comprehensive loss, depending on whether the derivative financial instrument qualifies for hedge accounting, and if so, whether it qualifies as a fair value hedge or a cash flow hedge and whether the hedge is effective. Generally, changes in the fair value of derivatives accounted for as fair value hedges are recorded in income along with the portion of the change in the fair value of the hedged items that relate to the hedged risk. Changes in the fair value of derivatives accounted for as cash flow hedges, to the extent they are effective as hedges, are recorded in accumulated other comprehensive loss, net of tax. We classify the cash flows from derivative instruments that have been designated as fair value or cash flow hedges in the same category as the cash flows from the items being hedged. Changes in the fair value of derivatives not qualifying as hedges and the ineffective portion of hedges are reported in income.

Revenue recognition – On January 1, 2018, we adopted ASU No. 2014-09, *Revenue from Contracts with Customers*, and related amendments. We applied the new standards using the modified retrospective approach under which the cumulative effect of initially applying the standards was recorded as an adjustment to retained earnings as of the date of adoption. As such, our results for 2017 were not revised and continue to be reported under the accounting standards in effect at that time. The impact of these standards on our 2018 consolidated statement of income was not significant.

Beginning in 2018, our product revenue is recognized when control of the goods is transferred to customers, in an amount that reflects the consideration we expect to be entitled to in exchange for those goods. In most cases, control is transferred when products are shipped. We have elected to account for shipping and handling activities that occur after the customer has obtained control of the product as fulfillment activities and not as separate performance obligations. For our service revenues, we recognize the vast majority of this revenue as services are provided. The majority of our contracts are for the shipment of tangible products or the delivery of services that have a single performance obligation or include multiple performance obligations where control is transferred at the same time.

During 2017, revenue was recognized when (1) persuasive evidence of an arrangement existed, (2) delivery occurred or services were rendered, (3) the sales price was fixed or determinable, and (4) collectibility was reasonably assured. Our product revenue was recognized upon shipment or customer receipt, based upon the transfer of title, and we recognized the majority of our service revenue as the services were provided.

In all periods, revenue is presented on the consolidated statements of (loss) income net of rebates, discounts, amortization of prepaid product discounts, and taxes collected concurrent with revenue-producing activities. Many of our check supply contracts with financial institutions provide for rebates on certain products. We record these rebates as reductions of revenue and as accrued liabilities on the consolidated balance sheets when the related revenue is recognized. Amounts billed to

customers for shipping and handling are included in revenue, while the related shipping and handling costs are reflected in cost of products and are accrued when the related revenue is recognized.

When another party is involved in providing goods or services to a customer, we must determine whether our obligation is to provide the specified good or service itself (i.e., we are the principal in the transaction) or to arrange for that good or service to be provided by the other party (i.e., we are an agent in the transaction). When we are responsible for satisfying a performance obligation, based on our ability to control the product or service provided, we are considered the principal and revenue is recognized for the gross amount of consideration. When the other party is primarily responsible for satisfying a performance obligation, we are considered the agent and revenue is recognized in the amount of any fee or commission to which we are entitled. Within our Small Business Services segment, we sell certain products and services through a network of Safeguard distributors. We have determined that we are the principal in these transactions and revenue is recorded for the gross amount of consideration.

Certain of our contracts for data-driven marketing solutions and treasury management outsourcing services have variable consideration that is contingent on either the success of the marketing campaign ("pay-for-performance") or the volume of outsourcing services provided. We recognize revenue for estimated variable consideration as services are provided based on the most likely amount to be realized. Revenue is recognized to the extent that it is probable that a significant reversal of revenue will not occur when the contingency is resolved. Estimates regarding the recognition of variable consideration are updated each quarter. Typically, the amount of consideration for these contracts is finalized within 4 months, although pricing under certain of our outsourcing contracts may be based on annual volume commitments. Revenue recognized from these contracts was approximately \$200,000 in 2019.

Our payment terms vary by type of customer and the products or services offered. The time period between invoicing and when payment is due is not significant. For certain products, services and customer types, we require payment before the products or services are delivered to the customer. When a customer pays in advance, primarily for treasury management solutions and web hosting services, we defer the revenue and recognize it as the services are performed, generally over a period of less than 1 year. Deferred revenue is included in accrued liabilities and other non-current liabilities on our consolidated balance sheets.

In addition to the amounts included in deferred revenue, we will recognize revenue in future periods related to remaining performance obligations for certain of our data-driven marketing and treasury management solutions contracts. Generally, these contracts have terms of 1 year or less and many have terms of 3 months or less, and therefore, we disregard any potential financing component. The amount of revenue related to these unsatisfied performance obligations is not significant to our annual consolidated revenue. When the revenue recognized for uncompleted contracts exceeds the amount of customer billings and the right to receive the consideration is conditional, a contract asset is recorded. These amounts are included in revenue in excess of billings on the consolidated balance sheets. Additionally, we record an asset for unbilled receivables when the revenue recognized has not been billed to customers in accordance with contractually stated billing terms and the right to receive the consideration is unconditional. These amounts are also included in revenue in excess of billings on the consolidated balance sheets.

Beginning in 2018, we began recording sales commissions related to obtaining check supply and treasury management solution contracts as other non-current assets on the consolidated balance sheets. These assets are amortized as SG&A expense on the straight-line basis, which approximates the timing of the transfer of goods or services to the customer. Generally, these amounts are being amortized over periods of 3 to 5 years. We expense these sales commissions as incurred when the amortization period would be 1 year or less.

Restructuring and integration expense – We incur restructuring and integration expense as a result of fundamental changes in the manner in which certain business functions are conducted, including the integration of acquired businesses into our systems and processes and the consolidation and migration of certain applications and processes. We also incur expenses resulting from our various cost management efforts, including facility closings and the relocation of business activities. These expenses consist of costs that are expensed when incurred, such as information technology consulting and project management costs, internal labor, employee and equipment moves, training and travel, as well as costs that are accrued for employee termination benefits payable under our ongoing severance benefit plan. We record accruals for employee termination benefits when it is probable that a liability has been incurred and the amount of the liability is reasonably estimable. We are required to make estimates and assumptions in calculating the restructuring accruals as, on some occasions, employees choose to voluntarily leave the company prior to their termination date or they secure another position within the company. In these situations, the employees do not receive termination benefits. To the extent our assumptions and estimates differ from our actual costs, subsequent adjustments to restructuring and integration accruals have been and will be required. Restructuring and integration accruals are included in accrued liabilities and other non-current liabilities on our consolidated balance sheets.

Employee share-based compensation – Our share-based compensation consists of non-qualified stock options, restricted stock units, restricted stock, performance share awards and an employee stock purchase plan. Employee share-based compensation expense is included in total cost of revenue and in SG&A expense on our consolidated statements of (loss) income, based on the functional areas of the employees receiving the awards, and is recognized as follows:

- The fair value of stock options is measured on the grant date using the Black-Scholes option pricing model. The related compensation expense is recognized on the straight-line basis, net of estimated forfeitures, over the options' vesting periods.
- The fair value of restricted stock and a portion of our restricted stock unit awards is measured on the grant date based on the market value of our common stock. The related compensation expense, net of estimated forfeitures, is recognized over the applicable service period.
- Certain of our restricted stock unit awards may be settled in cash if an employee voluntarily chooses to leave the company. These awards are included in accrued liabilities and other non-current liabilities on the consolidated balance sheets and are re-measured at fair value as of each balance sheet date.
- Compensation expense resulting from the 15% discount provided under our employee stock purchase plan is recognized over the purchase period of 6 months.
- The performance share awards specify certain performance and market-based conditions that must be achieved in order for the awards to vest. For the portion of the awards based on a performance condition, the performance target is not considered in determining the fair value of the awards and thus, fair value is measured on the grant date based on the market value of our common stock. The related compensation expense for this type of award is recognized, net of estimated forfeitures, over the related service period. The amount of compensation expense is dependent on our periodic assessment of the probability of the targets being achieved and our estimate, which may vary over time, of the number of shares that ultimately will be issued. For the portion of the awards based on a market condition, fair value is calculated on the grant date using the Monte Carlo simulation model. All compensation cost for these awards is recognized, net of estimated forfeitures, over the related service period, even if the market condition is never satisfied.

Postretirement benefit plan – We have historically provided certain health care benefits for a large number of retired U.S. employees hired prior to January 1, 2002. Our postretirement benefit income and obligation are calculated utilizing various actuarial assumptions and methodologies. These assumptions include, but are not limited to, the discount rate, the expected long-term rate of return on plan assets, estimated medical claims, the expected health care cost trend rate and the average remaining life expectancy of plan participants. We analyze the assumptions used each year when we complete our actuarial valuation of the plan. When actual events differ from our assumptions or when we change the assumptions used, an unrecognized actuarial gain or loss results. The gain or loss is recognized immediately on the consolidated balance sheets within accumulated comprehensive loss and is amortized into postretirement benefit income over the average remaining life expectancy of inactive plan participants, as a large percentage of our plan participants are classified as inactive.

The valuation of our postretirement plan requires judgment about circumstances that are inherently uncertain, including projected equity market performance, the number of plan participants, catastrophic health care events for our plan participants and a significant change in medical costs. Actual results may differ from assumed and estimated amounts.

(Loss) earnings per share – We calculate (loss) earnings per share using the two-class method, as we have unvested share-based payment awards that contain nonforfeitable rights to dividends or dividend equivalent payments. The two-class method is an earnings allocation formula that determines (loss) earnings per share for each class of common stock and participating security according to dividends declared and participation rights in undistributed earnings. Basic (loss) earnings per share is based on the weighted-average number of common shares outstanding during the year. Diluted (loss) earnings per share is based on the weighted-average number of common shares outstanding during the year, adjusted to give effect to potential common shares such as stock options and other awards that are not participating securities, calculated using the treasury stock method.

Comprehensive (loss) income – Comprehensive (loss) income includes charges and credits to shareholders' equity that are not the result of transactions with shareholders. Our total comprehensive (loss) income consists of net (loss) income, changes in the funded status and amortization of amounts related to our postretirement benefit plans, unrealized gains and losses on our cash flow hedge, unrealized gains and losses on available-for-sale debt securities and foreign currency translation adjustments. The items of other comprehensive (loss) income are included in accumulated other comprehensive loss on the consolidated balance sheets and statements of shareholders' equity, net of their related tax impacts. We release stranded income tax effects from accumulated other comprehensive loss when the circumstances upon which they are premised cease to exist.

NOTE 2: NEW ACCOUNTING PRONOUNCEMENTS

Accounting Standards Recently Adopted

ASU No. 2016-02 – In February 2016, the Financial Accounting Standards Board (FASB) issued ASU No. 2016-02, *Leasing*. This standard is intended to increase transparency and comparability among organizations by requiring the recognition of lease right-of-use assets and lease liabilities for virtually all leases and by requiring the disclosure of key information about leasing arrangements. In July 2018, the FASB issued two amendments to this standard: ASU No. 2018-10, *Codification Improvements to Topic 842, Leases*, which amended narrow aspects of the guidance in ASU No. 2016-02, and ASU No. 2018-11, *Targeted Improvements*, which provided an optional transition method under which comparative periods presented in financial statements in the period of adoption would not be restated. In March 2019, the FASB issued ASU No. 2019-01, *Codification Improvements*. This standard addressed areas identified as companies prepared to implement ASU No. 2016-02. We adopted all of these standards on January 1, 2019, using a modified retrospective approach and the optional transition method under ASU No. 2018-11. As such, prior periods have not been restated to reflect the new guidance.

We elected the practical expedient package outlined in ASU No. 2016-02 under which we did not have to reassess whether an arrangement contains a lease, we carried forward our previous classification of leases as either operating or capital leases, and we did not reassess previously recorded initial direct costs. Additionally, we made the following policy elections:

- we excluded leases with original terms of 12 months or less from lease assets and lease liabilities;
- we separated nonlease components, such as common area maintenance charges and utilities, from the associated lease component for real estate leases, based on their estimated fair values; and
- we used the accounting lease term when determining the incremental borrowing rate for leases with renewal options.

Adoption of the standards had a material impact on our consolidated balance sheet, but did not have a significant impact on our consolidated statement of loss or our consolidated statement of cash flows. The most significant impact was the recognition of operating lease assets of \$50,803, current operating lease liabilities of \$13,611 and non-current operating lease liabilities of \$37,440 as of January 1, 2019. Our accounting for finance leases remained substantially unchanged.

Accounting Standards Not Yet Adopted

ASU No. 2016-13 – In June 2016, the FASB issued ASU No. 2016-13, *Measurement of Credit Losses on Financial Instruments*. This standard introduces new guidance for the accounting for credit losses on instruments within its scope, including trade and loans receivable and available-for-sale debt securities. In addition, the FASB subsequently issued several amendments to this standard. All of these standards are effective for us on January 1, 2020 and require adoption using a modified retrospective approach. We do not expect the application of these standards to have a significant impact on accounts receivable, and we are currently completing our assessment of the impact on notes receivable. We also do not expect the application of these standards to have a significant impact on our results of operations.

ASU No. 2018-13 – In August 2018, the FASB issued ASU No. 2018-13, *Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurements*. This standard removes, modifies and adds certain disclosures related to recurring and nonrecurring fair value measurements. During 2018, we adopted the provisions of the standard that remove and modify disclosure requirements. The additional disclosures required under the guidance are effective for us on January 1, 2020 and are required to be applied prospectively to fair value measurements completed on or after the effective date.

ASU No. 2018-15 – In August 2018, the FASB issued ASU No. 2018-15, *Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*. This standard aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The accounting for the service element of a hosting arrangement that is a service contract is not affected by the new standard. The guidance is effective for us on January 1, 2020 and may be adopted retrospectively or prospectively to eligible costs incurred on or after the date the guidance is first applied. This new guidance will impact our results of operations and financial position as we currently expense these implementation costs as incurred. We plan to adopt the standard prospectively. As such, the impact of the standard on our consolidated financial statements depends on the transactions that occur subsequent to adoption.

ASU No. 2019-12 – In December 2019, the FASB issued ASU No. 2019-12, *Simplifying the Accounting for Income Taxes*. This standard addresses several specific areas of accounting for income taxes. The guidance is effective for us on January 1, 2021. Portions of the standard are required to be adopted prospectively and certain aspects will be adopted using the modified retrospective approach. We do not expect the application of this standard to have a significant impact on our results of operations or financial position.

NOTE 3: SUPPLEMENTAL BALANCE SHEET AND CASH FLOW INFORMATION

Trade accounts receivable – Net trade accounts receivable was comprised of the following at December 31:

<i>(in thousands)</i>	2019	2018
Trade accounts receivable – gross	\$ 168,406	\$ 177,501
Allowances for uncollectible accounts	(4,985)	(3,639)
Trade accounts receivable – net	<u>\$ 163,421</u>	<u>\$ 173,862</u>

Changes in the allowances for uncollectible accounts for the years ended December 31 were as follows:

<i>(in thousands)</i>	2019	2018	2017
Balance, beginning of year	\$ 3,639	\$ 2,884	\$ 2,828
Bad debt expense	5,213	3,622	3,208
Write-offs, net of recoveries	(3,867)	(2,867)	(3,152)
Balance, end of year	<u>\$ 4,985</u>	<u>\$ 3,639</u>	<u>\$ 2,884</u>

Inventories and supplies – Inventories and supplies were comprised of the following at December 31:

<i>(in thousands)</i>	2019	2018
Raw materials	\$ 6,977	\$ 7,543
Semi-finished goods	7,368	7,273
Finished goods	21,982	27,608
Supplies	3,594	4,017
Inventories and supplies	<u>\$ 39,921</u>	<u>\$ 46,441</u>

Available-for-sale debt securities – Available-for-sale debt securities included within funds held for customers were comprised of the following:

<i>(in thousands)</i>	December 31, 2019			
	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Funds held for customers: ⁽¹⁾				
Domestic money market fund	\$ 18,000	\$ —	\$ —	\$ 18,000
Canadian and provincial government securities	9,056	—	(304)	8,752
Canadian guaranteed investment certificates	7,698	—	—	7,698
Available-for-sale debt securities	<u>\$ 34,754</u>	<u>\$ —</u>	<u>\$ (304)</u>	<u>\$ 34,450</u>

⁽¹⁾ Funds held for customers, as reported on the consolidated balance sheet as of December 31, 2019, also included cash of \$83,191.

<i>(in thousands)</i>	December 31, 2018			
	Cost	Gross unrealized gains	Gross unrealized losses	Fair value
Funds held for customers: ⁽¹⁾				
Domestic money market fund	\$ 16,000	\$ —	\$ —	\$ 16,000
Canadian and provincial government securities	8,485	—	(355)	8,130
Canadian guaranteed investment certificates	7,333	—	—	7,333
Available-for-sale debt securities	<u>\$ 31,818</u>	<u>\$ —</u>	<u>\$ (355)</u>	<u>\$ 31,463</u>

⁽¹⁾ Funds held for customers, as reported on the consolidated balance sheet as of December 31, 2018, also included cash of \$69,519.

Expected maturities of available-for-sale debt securities as of December 31, 2019 were as follows:

<i>(in thousands)</i>	Fair value
Due in one year or less	\$ 28,700
Due in two to five years	3,282
Due in six to ten years	2,468
Available-for-sale debt securities	<u>\$ 34,450</u>

Further information regarding the fair value of available-for-sale debt securities can be found in Note 8.

Revenue in excess of billings – Revenue in excess of billings was comprised of the following at December 31:

<i>(in thousands)</i>	2019	2018
Conditional right to receive consideration	\$ 24,499	\$ 19,705
Unconditional right to receive consideration	8,291	10,753
Revenue in excess of billings	<u>\$ 32,790</u>	<u>\$ 30,458</u>

Property, plant and equipment – Property, plant and equipment was comprised of the following at December 31:

<i>(in thousands)</i>	2019			2018		
	Gross carrying amount	Accumulated depreciation	Net carrying amount	Gross carrying amount	Accumulated depreciation	Net carrying amount
Machinery and equipment	\$ 327,151	\$ (282,741)	\$ 44,410	\$ 313,000	\$ (275,721)	\$ 37,279
Buildings and improvements	118,284	(86,162)	32,122	116,348	(83,317)	33,031
Land and improvements	28,212	(8,277)	19,935	28,199	(8,167)	20,032
Property, plant and equipment	<u>\$ 473,647</u>	<u>\$ (377,180)</u>	<u>\$ 96,467</u>	<u>\$ 457,547</u>	<u>\$ (367,205)</u>	<u>\$ 90,342</u>

Assets held for sale – Assets held for sale as of December 31, 2019 consisted of a Small Business Services customer list intangible asset and certain assets within Financial Services. The Small Business Services customer list was also held for sale as of December 31, 2018. We are actively marketing these assets and expect the selling prices will equal or exceed their current carrying values.

During 2018, we sold 2 providers of printed and promotional products and 2 small business distributors, as well as several small business customer lists. During 2017, we sold a provider of printed and promotional products, assets associated with certain custom printing activities and 3 small business distributors. All of these assets were included in our Small Business Services segment and consisted primarily of intangible assets. We determined that these assets would be better positioned for long-term growth if they were managed by independent distributors. Subsequent to the sales, the assets were owned by independent distributors that are part of our Safeguard distributor network. As such, our revenue was not impacted by these sales and the impact to our costs was not significant. During 2018, we entered into aggregate notes receivable of \$35,616 in conjunction with these sales and we recognized aggregate net gains of \$15,641 within SG&A expense on the consolidated statement of income. During 2017, we entered into aggregate notes receivable of \$24,497 in conjunction with these sales and we recognized aggregate net gains of \$8,703 within SG&A expense on the consolidated statement of income.

During 2017, we recorded aggregate pretax asset impairment charges of \$8,250 related to a small business distributor sold during the second quarter of 2017. The impairment charges reduced the carrying value of the business to its fair value less costs to sell, as we finalized the sale of this business.

Intangibles – Amortizable intangibles were comprised of the following at December 31:

<i>(in thousands)</i>	2019			2018		
	Gross carrying amount	Accumulated amortization	Net carrying amount	Gross carrying amount	Accumulated amortization	Net carrying amount
Internal-use software	\$ 380,905	\$ (299,698)	\$ 81,207	\$ 388,477	\$ (308,313)	\$ 80,164
Customer lists/relationships	348,055	(187,462)	160,593	379,570	(170,973)	208,597
Software to be sold	36,900	(19,657)	17,243	36,900	(15,430)	21,470
Technology-based intangibles	34,780	(22,122)	12,658	40,000	(14,707)	25,293
Trade names	32,505	(28,084)	4,421	50,645	(26,204)	24,441
Intangibles	<u>\$ 833,145</u>	<u>\$ (557,023)</u>	<u>\$ 276,122</u>	<u>\$ 895,592</u>	<u>\$ (535,627)</u>	<u>\$ 359,965</u>

In each of the past 3 years, we recorded asset impairment charges related to our intangible assets. Further information can be found in Note 8.

Amortization expense related to intangibles was as follows for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
Customer lists/relationships	\$ 51,243	\$ 57,243	\$ 54,450
Internal-use software	41,258	38,307	35,952
Technology-based intangibles	7,415	7,607	6,400
Trade names	5,391	6,362	5,789
Software to be sold	4,227	5,009	4,193
Amortization of intangibles	<u>\$ 109,534</u>	<u>\$ 114,528</u>	<u>\$ 106,784</u>

Based on the intangibles in service as of December 31, 2019, estimated amortization expense for each of the next five years ending December 31 is as follows:

<i>(in thousands)</i>	Estimated amortization expense
2020	\$ 90,381
2021	69,249
2022	42,415
2023	28,133
2024	17,296

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We acquire internal-use software in the normal course of business. We also acquire intangible assets in conjunction with acquisitions (Note 6). The following intangible assets were acquired during the years ended December 31:

<i>(in thousands)</i>	2019		2018		2017	
	Amount	Weighted-average amortization period (in years)	Amount	Weighted-average amortization period (in years)	Amount	Weighted-average amortization period (in years)
Internal-use software	\$ 43,991	3	\$ 42,744	3	\$ 38,422	3
Customer lists/relationships ⁽¹⁾	17,771	8	60,775	8	60,034	7
Trade names	—	—	14,700	7	10,000	6
Technology-based intangibles	—	—	7,500	5	800	3
Software to be sold	—	—	—	—	2,200	5
Acquired intangibles	<u>\$ 61,762</u>	<u>5</u>	<u>\$ 125,719</u>	<u>6</u>	<u>\$ 111,456</u>	<u>6</u>

⁽¹⁾ We acquired customer lists that did not qualify as business combinations of \$11,956 during 2019 and \$1,188 during 2018.

Information regarding acquired intangibles does not include measurement-period adjustments for changes in the estimated fair values of intangibles acquired through acquisitions. Information regarding these adjustments can be found in Note 6.

Goodwill – Changes in goodwill by reportable segment and in total were as follows:

<i>(in thousands)</i>	Small Business Services	Financial Services	Direct Checks	Total
Balance, December 31, 2017:				
Goodwill, gross	\$ 706,568	\$ 324,239	\$ 148,506	\$ 1,179,313
Accumulated impairment charges	(48,379)	—	—	(48,379)
Goodwill, net of accumulated impairment charges	658,189	324,239	148,506	1,130,934
Impairment charge (Note 8)	(78,188)	—	—	(78,188)
Goodwill resulting from acquisitions (Note 6)	59,488	46,419	—	105,907
Measurement-period adjustments for prior year acquisitions (Note 6)	1,420	2,763	—	4,183
Adjustment of assets held for sale	635	—	—	635
Currency translation adjustment	(2,845)	—	—	(2,845)
Balance, December 31, 2018	<u>\$ 638,699</u>	<u>\$ 373,421</u>	<u>\$ 148,506</u>	<u>\$ 1,160,626</u>
Balance, December 31, 2018:				
Goodwill, gross	\$ 765,266	\$ 373,421	\$ 148,506	\$ 1,287,193
Accumulated impairment charges	(126,567)	—	—	(126,567)
Goodwill, net of accumulated impairment charges	638,699	373,421	148,506	1,160,626
Impairment charges (Note 8)	(242,267)	(115,474)	—	(357,741)
Goodwill resulting from acquisitions (Note 6)	—	4,174	—	4,174
Measurement-period adjustments for prior year acquisitions (Note 6)	(340)	(1,426)	—	(1,766)
Currency translation adjustment	(806)	—	—	(806)
Balance, December 31, 2019	<u>\$ 395,286</u>	<u>\$ 260,695</u>	<u>\$ 148,506</u>	<u>\$ 804,487</u>
Balance, December 31, 2019:				
Goodwill, gross	\$ 764,120	\$ 376,169	\$ 148,506	\$ 1,288,795
Accumulated impairment charges	(368,834)	(115,474)	—	(484,308)
Goodwill, net of accumulated impairment charges	<u>\$ 395,286</u>	<u>\$ 260,695</u>	<u>\$ 148,506</u>	<u>\$ 804,487</u>

Other non-current assets – Other non-current assets were comprised of the following at December 31:

<i>(in thousands)</i>	2019	2018
Loans and notes receivable from Safeguard distributors	\$ 66,872	\$ 78,693
Postretirement benefit plan asset (Note 14)	56,743	41,259
Prepaid product discounts	51,145	54,642
Deferred sales commissions ⁽¹⁾	9,682	6,482
Other	13,428	15,032
Other non-current assets	<u>\$ 197,870</u>	<u>\$ 196,108</u>

⁽¹⁾ Amortization of deferred sales commission was \$3,108 for 2019 and \$2,722 for 2018.

Changes in prepaid product discounts were as follows for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
Balance, beginning of year	\$ 54,642	\$ 63,895	\$ 65,792
Additions ⁽¹⁾	21,068	14,023	18,224
Amortization	(24,055)	(22,941)	(19,969)
Other	(510)	(335)	(152)
Balance, end of year	<u>\$ 51,145</u>	<u>\$ 54,642</u>	<u>\$ 63,895</u>

⁽¹⁾ Prepaid product discounts are generally accrued upon contract execution. Cash payments made for prepaid product discounts were \$25,637 for 2019, \$23,814 for 2018 and \$27,079 for 2017.

Accrued liabilities – Accrued liabilities were comprised of the following at December 31:

<i>(in thousands)</i>	2019	2018
Deferred revenue ⁽¹⁾	\$ 46,098	\$ 54,313
Employee cash bonuses	36,918	31,286
Prepaid product discounts due within one year	14,709	10,926
Operating lease liabilities	12,898	—
Customer rebates	8,944	9,555
Other	59,771	78,383
Accrued liabilities	<u>\$ 179,338</u>	<u>\$ 184,463</u>

⁽¹⁾ \$51,386 of the December 31, 2018 amount was recognized as revenue during 2019.

Supplemental cash flow information – Supplemental cash flow information was as follows for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
Reconciliation of cash, cash equivalents, restricted cash and restricted cash equivalents to the consolidated balance sheets:			
Cash and cash equivalents	\$ 73,620	\$ 59,740	\$ 59,240
Restricted cash and restricted cash equivalents included in funds held for customers	101,191	85,519	69,579
Total cash, cash equivalents, restricted cash and restricted cash equivalents	<u>\$ 174,811</u>	<u>\$ 145,259</u>	<u>\$ 128,819</u>
Income taxes paid	\$ 60,764	\$ 88,253	\$ 124,878
Interest paid	33,227	25,910	19,465
Non-cash investing activities:			
Proceeds from sales of assets – notes receivable	1,685	35,616	24,497

NOTE 4: (LOSS) EARNINGS PER SHARE

The following table reflects the calculation of basic and diluted (loss) earnings per share. During each period, certain stock options, as noted below, were excluded from the calculation of diluted (loss) earnings per share because their effect would have been antidilutive.

<i>(in thousands, except per share amounts)</i>	2019	2018	2017
(Loss) earnings per share – basic:			
Net (loss) income	\$ (199,897)	\$ 149,630	\$ 230,155
Income allocated to participating securities	(101)	(617)	(1,457)
(Loss) income available to common shareholders	\$ (199,998)	\$ 149,013	\$ 228,698
Weighted-average shares outstanding	43,029	46,842	48,127
(Loss) earnings per share – basic	\$ (4.65)	\$ 3.18	\$ 4.75
(Loss) earnings per share – diluted:			
Net (loss) income	\$ (199,897)	\$ 149,630	\$ 230,155
Income allocated to participating securities	(101)	(616)	(1,450)
Re-measurement of share-based awards classified as liabilities	—	(471)	59
(Loss) income available to common shareholders	\$ (199,998)	\$ 148,543	\$ 228,764
Weighted-average shares outstanding	43,029	46,842	48,127
Dilutive impact of potential common shares	—	149	321
Weighted-average shares and potential common shares outstanding	43,029	46,991	48,448
(Loss) earnings per share – diluted	\$ (4.65)	\$ 3.16	\$ 4.72
Antidilutive options excluded from calculation	1,347	1,209	262

NOTE 5: OTHER COMPREHENSIVE INCOME (LOSS)

Reclassification adjustments – Information regarding amounts reclassified from accumulated other comprehensive loss to net (loss) income was as follows:

Accumulated other comprehensive loss components	Amounts reclassified from accumulated other comprehensive loss			Affected line item in consolidated statements of (loss) income
	2019	2018	2017	
<i>(in thousands)</i>				
Realized gains on interest rate swap	\$ 77	\$ —	\$ —	Interest expense
Tax expense	(20)	—	—	Income tax provision
Realized gains on interest rate swap, net of tax	57	—	—	Net (loss) income
Amortization of postretirement benefit plan items:				
Prior service credit	1,421	1,421	1,421	Other income
Net actuarial loss	(3,223)	(2,884)	(3,637)	Other income
Total amortization	(1,802)	(1,463)	(2,216)	Other income
Tax benefit	273	491	372	Income tax provision
Amortization of postretirement benefit plan items, net of tax	(1,529)	(972)	(1,844)	Net (loss) income
Total reclassifications, net of tax	\$ (1,472)	\$ (972)	\$ (1,844)	

Accumulated other comprehensive loss – Changes in the components of accumulated other comprehensive loss were as follows for the years ended December 31:

<i>(in thousands)</i>	Postretirement benefit plans	Net unrealized loss on marketable debt securities	Net unrealized loss on cash flow hedge	Currency translation adjustment	Accumulated other comprehensive loss
Balance, December 31, 2016	\$ (35,684)	\$ (213)	\$ —	\$ (14,474)	\$ (50,371)
Other comprehensive income (loss) before reclassifications	7,011	(109)	—	4,028	10,930
Amounts reclassified from accumulated other comprehensive loss	1,844	—	—	—	1,844
Net current-period other comprehensive income (loss)	8,855	(109)	—	4,028	12,774
Balance, December 31, 2017	(26,829)	(322)	—	(10,446)	(37,597)
Other comprehensive loss before reclassifications	(3,805)	(1)	—	(9,281)	(13,087)
Amounts reclassified from accumulated other comprehensive loss	972	—	—	—	972
Net current-period other comprehensive loss	(2,833)	(1)	—	(9,281)	(12,115)
Adoption of ASU No. 2018-02	(6,867)	—	—	—	(6,867)
Balance, December 31, 2018	(36,529)	(323)	—	(19,727)	(56,579)
Other comprehensive income (loss) before reclassifications	6,594	48	(1,040)	1,558	7,160
Amounts reclassified from accumulated other comprehensive loss	1,529	—	(57)	—	1,472
Net current-period other comprehensive income (loss)	8,123	48	(1,097)	1,558	8,632
Balance, December 31, 2019	\$ (28,406)	\$ (275)	\$ (1,097)	\$ (18,169)	\$ (47,947)

NOTE 6: ACQUISITIONS

We periodically complete business combinations that align with our business strategy. Our acquisitions during the past 3 years were all cash transactions, funded by use of our revolving credit facility. We completed these acquisitions primarily to increase our mix of marketing solutions and other services revenue, to add financial technology and web services capabilities, to improve our product and service offerings and to reach new customers. Transaction costs related to these acquisitions totaled \$215 in 2019, \$1,719 in 2018 and \$2,342 in 2017.

2019 acquisitions – During 2019, we completed the following acquisitions in our Financial Services segment:

- In December 2019, we acquired selected assets comprising the remittance processing business of Fiserv, Inc., including its lockbox processing services. The preliminary allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in tax-deductible goodwill of \$4,174. The acquisition resulted in goodwill as it allows us to extend our expertise and reach with the addition of a reseller arrangement through the banking sales channel of Fiserv. We expect to finalize the allocation of the purchase price by the second quarter of 2020, when our valuation of the acquired intangible assets and various other assets acquired is complete.
- In December 2019, we acquired selected assets comprising the remittance processing business of Synchrony Financial. We expect to finalize the allocation of the purchase price by the second quarter of 2020, when our valuation of the acquired intangible assets, as well as various other assets acquired and liabilities assumed, is complete.

2018 acquisitions – During 2018, we completed the following acquisitions that were included within our Small Business Services segment:

- In March 2018, we acquired all of the equity of Logomix Inc. (Logomix), a self-service marketing and branding platform that helps small businesses create logos and custom marketing products. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in nondeductible goodwill of \$29,451. The acquisition resulted in goodwill as we expected to accelerate revenue growth by combining our capabilities with Logomix's platform.
- In June 2018, we acquired selected assets of Velocity Servers, Inc., doing business as ColoCrossing, a data center solutions, cloud hosting and infrastructure colocation provider of dedicated hosting services. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in tax-deductible goodwill of \$9,082. The acquisition resulted in goodwill as we expected to accelerate revenue growth by bringing colocation services into our portfolio of hosting services.
- In December 2018, we acquired selected assets of My Corporation Business Services, Inc., a provider of business incorporation and organization services. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in tax-deductible goodwill of \$20,615. The acquisition resulted in goodwill as we expected to accelerate revenue growth by bringing these services into our portfolio of web services.
- During 2018, we acquired the operations of 3 small business distributors. The assets acquired consisted primarily of customer list intangible assets. As these small business distributors were previously part of our Safeguard distributor network, our revenue was not impacted by these acquisitions, and the impact to our costs was not significant.

Within our Financial Services segment, we acquired the equity of REMITCO LLC (RemitCo) in August 2018. RemitCo was the remittance processing business of First Data Corporation, which subsequently merged with Fiserv, Inc. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in tax-deductible goodwill of \$44,992 and a customer list intangible asset of \$36,000. The acquisition resulted in goodwill as it expanded the scale of our receivables management solutions, which allows us to take advantage of the ongoing market trend toward outsourcing technology-enabled services to trusted financial technology partners of scale.

2017 acquisitions – During 2017, we completed the following acquisitions that were included within our Small Business Services segment:

- In February 2017, we acquired selected assets of Panthur Pty Ltd (Panthur), an Australian web hosting and domain registration service provider. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in nondeductible goodwill of \$1,198. The acquisition resulted in goodwill as we used Panthur's platform to selectively expand into foreign markets.
- In July 2017, we acquired all of the equity of Digital Pacific Group Pty Ltd (Digital Pacific), an Australian web hosting and domain registration service provider. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in nondeductible goodwill of \$23,773. The acquisition resulted in goodwill as we acquired enhanced web hosting capabilities that we used to selectively expand into foreign markets.
- In September 2017, we acquired all of the equity of j2 Global Australia Pty Ltd, doing business as Web24, an Australian web hosting and domain registration service provider. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in nondeductible goodwill of \$2,731. The acquisition resulted in goodwill as we used Web24's platform to selectively expand into foreign markets.
- In November 2017, we acquired selected assets of Impact Marketing Specialists, Inc., which provides marketing solutions to real estate agents.
- In December 2017, we acquired selected assets of SY Holdings, LLC, doing business as managed.com, a web hosting services provider. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities assumed resulted in tax-deductible goodwill of \$266. The acquisition resulted in goodwill as the expertise we acquired improved our customer mix and enhanced our portfolio of web services.
- During 2017, we acquired the operations of several small business distributors. The assets acquired consisted primarily of customer list intangible assets. All but 1 of these distributors were previously part of our Safeguard distributor network. As such, our results of operations were not significantly impacted by these acquisitions.

Within our Financial Services segment, we acquired all of the equity of RDM Corporation (RDM) of Canada in April 2017. RDM is a provider of remote deposit capture software, hardware and digital imaging solutions for financial institutions and corporate clients. The allocation of the purchase price based upon the estimated fair values of the assets acquired and liabilities

assumed resulted in nondeductible goodwill of \$35,973. The acquisition resulted in goodwill as it enhanced our selection of treasury management solutions, strengthening our value proposition and improving our market position.

Aggregate information – Information regarding goodwill by reportable segment and the useful lives of acquired intangibles can be found in Note 3. Information regarding the calculation of the estimated fair values of the acquired intangibles can be found in Note 8. As our acquisitions were not significant to our reported operating results both individually and in the aggregate, pro forma results of operations are not provided.

The following illustrates the allocation of the aggregate purchase price for the above acquisitions to the assets acquired and liabilities assumed:

<i>(in thousands)</i>	2019 acquisitions⁽¹⁾	2018 acquisitions⁽²⁾	2017 acquisitions⁽³⁾
Net tangible assets acquired and liabilities assumed ⁽⁴⁾	\$ 2,735	\$ 8,200	\$ (1,956)
Identifiable intangible assets:			
Customer lists/relationships	5,815	60,587	58,620
Trade names	—	14,700	10,000
Technology-based intangibles	—	7,500	800
Software to be sold	—	—	2,200
Internal-use software	276	—	1,445
Total intangible assets	6,091	82,787	73,065
Goodwill	4,174	104,140	63,941
Total aggregate purchase price	13,000	195,127	135,050
Liabilities for holdback payments and contingent consideration ⁽⁵⁾	(3,000)	(1,078)	(5,980)
Non-cash consideration ⁽⁶⁾	—	(1,060)	—
Net cash paid for current year acquisitions	10,000	192,989	129,070
Holdback payments for prior year acquisitions	1,605	21,269	10,153
Payments for acquisitions, net of cash acquired ⁽⁷⁾	\$ 11,605	\$ 214,258	\$ 139,223

⁽¹⁾ Net tangible assets acquired and liabilities assumed for 2019 consisted primarily of operating lease assets and property, plant and equipment, as well as operating lease liabilities.

⁽²⁾ Net tangible assets acquired and liabilities assumed for 2018 consisted primarily of REMITCO accounts receivable and Logomix deferred income tax liabilities. Amounts include measurement-period adjustments recorded in 2019 for the finalization of purchase accounting for certain of the 2018 acquisitions. These adjustments decreased goodwill \$1,766, with the offset to various assets and liabilities, including a \$1,000 increase in customer list intangible assets.

⁽³⁾ Net tangible assets acquired and liabilities assumed for 2017 consisted primarily of accounts receivable, marketable securities, inventory and accrued liabilities of RDM and Digital Pacific. Amounts include measurement-period adjustments recorded in 2018 for the finalization of purchase accounting for several of the 2017 acquisitions. These adjustments increased goodwill \$4,183, with the offset to various assets and liabilities, including deferred revenue, deferred income taxes and other long-term liabilities, as well as a decrease of \$1,654 in customer list intangibles and an increase in internal-use software of \$1,000.

⁽⁴⁾ Net tangible assets acquired included trade accounts receivable of \$11,564 during 2018 and \$4,544 during 2017.

⁽⁵⁾ Consists of holdback payments due at future dates and liabilities for contingent consideration, which were not significant.

⁽⁶⁾ Consists of pre-acquisition amounts owed to us by certain of the acquired businesses.

⁽⁷⁾ Cash and cash equivalents acquired were \$1,692 during 2018 and \$27,299 during 2017.

NOTE 7: DERIVATIVE FINANCIAL INSTRUMENTS

As part of our interest rate risk management strategy, in July 2019, we entered into an interest rate swap, which we designated as a cash flow hedge, to mitigate variability in interest payments on a portion of the amount drawn under our revolving credit facility (Note 15). The interest rate swap, which terminates in March 2023 when our revolving credit facility matures, effectively converts \$200,000 of variable rate debt to a fixed rate of 1.798%. Changes in the fair value of the interest rate swap are recorded in accumulated other comprehensive loss on the consolidated balance sheet and are subsequently reclassified into interest expense as interest payments are made on the variable-rate debt. The fair value of the interest rate swap was \$1,480 as of December 31, 2019 and was included in other non-current liabilities on the consolidated balance sheet. The fair value of this derivative is calculated based on the prevailing LIBOR rate curve on the date of measurement. The cash flow hedge was fully effective as of December 31, 2019 and its impact on the 2019 consolidated statement of loss and

consolidated statement of cash flows was not significant. We also do not expect the amount to be reclassified into interest expense over the next 12 months to be significant.

NOTE 8: FAIR VALUE MEASUREMENTS

Annual asset impairment analyses

We evaluate the carrying value of goodwill and indefinite-lived intangibles as of July 31 of each year and between annual evaluations if events occur or circumstances change that would indicate a possible impairment. Our policy on impairment of goodwill and indefinite-lived intangibles, which is included in Note 1, explains our methodology for assessing impairment of these assets.

2019 annual impairment analyses – In completing the 2019 annual impairment analysis of goodwill, we elected to perform a qualitative analysis for 4 of our reporting units and a quantitative assessment for 2 of our reporting units: Financial Services Data-Driven Marketing and Small Business Services Web Services. Financial Services Data-Driven Marketing includes our businesses that provide outsourced marketing campaign targeting and execution and marketing analytics solutions. Small Business Services Web Services includes our businesses that provide web hosting and domain name services, logo and web design, payroll services, email marketing, search engine marketing and optimization, and business incorporation and organization services.

The qualitative analyses evaluated factors, including, but not limited to, economic, market and industry conditions, cost factors and the overall financial performance of the reporting units. We also considered the quantitative analyses completed as of July 31, 2017, which indicated that the estimated fair values of the 4 reporting units exceeded their carrying values by approximate amounts between \$64,000 and \$1,405,000, or by amounts between 50% and 314% above the carrying values of their net assets. In completing these assessments, we noted no changes in events or circumstance that indicated that it was more likely than not that the fair value of any reporting unit was less than its carrying amount.

The quantitative analyses as of July 31, 2019 indicated that the goodwill of our Financial Services Data-Driven Marketing reporting unit was partially impaired and the goodwill of our Small Business Services Web Services reporting unit was fully impaired. As such, we recorded pretax goodwill impairment charges of \$115,474 and \$242,267, respectively, during the quarter ended September 30, 2019. Both impairment charges resulted from a combination of triggering events and circumstances, including underperformance against 2019 expectations and the original acquisition business case assumptions, driven substantially by our decision in the third quarter of 2019 to exit certain customer contracts, the loss of certain large customers in the third quarter of 2019 as they elected to in-source some of the services we provide, and the sustained decline in our stock price. The impairment charges were measured as the amount by which the reporting units' carrying values exceeded their estimated fair values, limited to the carrying amount of goodwill. After the impairment charges, \$70,914 of goodwill remained in the Financial Services Data-Driven Marketing reporting unit.

2018 annual impairment analyses – In completing the 2018 annual impairment analysis of goodwill, we elected to perform a qualitative assessment for 5 of our reporting units and a quantitative assessment for 2 of our reporting units: Small Business Services Web Services and Small Business Services Indirect. Small Business Services Web Services includes our businesses that provide web hosting and domain name services, logo and web design, payroll services, email marketing, search engine marketing and optimization, and business incorporation and organization services. Small Business Services Indirect consists primarily of our Safeguard distributor channel, former Safeguard distributors that we have purchased and our independent dealer channel.

The qualitative analyses evaluated factors, including, but not limited to, economic, market and industry conditions, cost factors and the overall financial performance of the reporting units. We also considered the quantitative analyses completed as of July 31, 2017, which indicated that the estimated fair values of the 5 reporting units exceeded their carrying values by approximate amounts between \$64,000 and \$1,405,000, or by amounts between 50% and 314% above the carrying values of their net assets. In completing these assessments, we noted no changes in events or circumstances that indicated that it was more likely than not that the fair value of any reporting unit was less than its carrying amount.

The quantitative analysis as of July 31, 2018 for the Small Business Services Web Services reporting unit indicated that the estimated fair value of the reporting unit exceeded its carrying value by approximately \$63,000, or 22%. The carrying value of this reporting unit's goodwill was \$225,383 as of July 31, 2018. The quantitative analysis of the Small Business Services Indirect reporting unit indicated that the reporting unit's goodwill was fully impaired, resulting in a pretax goodwill impairment charge of \$78,188 during the quarter ended September 30, 2018. The impairment charge was measured as the amount by which the reporting unit's carrying value exceeded its estimated fair value, limited to the carrying amount of goodwill. The analysis of this reporting unit, which incorporated the results of the annual strategic planning process completed during the third quarter of 2018, indicated lowered projected long-term revenue growth and profitability levels resulting from changes in strategy and focus and in

the mix of products and services sold, including the continuing secular decline in check and forms usage. Additionally, our strategic plan reflected a shift in company resources to our growing businesses. This reporting unit included the Safeguard trade name intangible asset, which was assigned an indefinite useful life. As of July 31, 2018, we completed a quantitative analysis of this asset that indicated the asset was fully impaired (level 3 fair value measurement), resulting in a pretax asset impairment charge of \$19,100. This impairment charge was driven by the same factors that resulted in the goodwill impairment charge, which indicated that any royalties attributable to the asset under our relief from royalty calculation had no future value.

2017 annual impairment analyses – In conjunction with our annual strategic planning process during the third quarter of 2017, we made various changes to our internal reporting structure. As a result, we reassessed our operating segments and determined that no changes to reportable operating segments were required. We also reassessed our previously determined reporting units and concluded that a realignment of a portion of our reporting units was required. As such, we reallocated the carrying value of goodwill to our revised reporting units based on their relative fair values. We analyzed goodwill for impairment immediately prior to this realignment by performing qualitative analyses for our Small Business Services reporting units and quantitative analyses for our Financial Services and Direct Checks reporting units. The qualitative analyses evaluated factors including, but not limited to, economic, market and industry conditions, cost factors and the overall financial performance of the reporting units. We also considered the last quantitative analysis we completed. In completing these assessments, we noted no changes in events or circumstances that indicated that it was more likely than not that the fair value of any reporting unit was less than its carrying amount, with the exception of our Small Business Services Safeguard reporting unit. The analysis of this reporting unit, which incorporated the results of the annual strategic planning process, indicated lowered projected long-term revenue growth and profitability levels resulting from changes in market trends and the mix of products and services sold, including the continuing secular decline in check and forms usage. As a result, we completed impairment analyses of the long-term assets of this reporting unit, excluding goodwill, and concluded that these assets were not impaired. We then completed the quantitative analysis of the reporting unit, which indicated that the reporting unit's goodwill was fully impaired and resulted in a pre-tax goodwill impairment charge of \$28,379 during the quarter ended September 30, 2017. The impairment charge was measured as the amount by which the reporting unit's carrying value exceeded its estimated fair value, limited to the carrying amount of goodwill. Immediately subsequent to the realignment of our reporting unit structure, we completed a quantitative analysis for all of our reporting units. This quantitative analysis as of July 31, 2017 indicated that the estimated fair values of our reporting units exceeded their carrying values by approximate amounts between \$64,000 and \$1,405,000, or by amounts between 36% and 314% above the carrying values of their net assets.

In completing the 2017 annual impairment analysis of our indefinite-lived trade name, we elected to perform a quantitative assessment, which indicated that the calculated fair value of the asset exceeded its carrying value of \$19,100 by approximately \$16,000 as of July 31, 2017.

Other non-recurring asset impairment analyses

We evaluate the recoverability of property, plant, equipment and amortizable intangibles not held for sale whenever events or changes in circumstances indicate that an asset group's carrying amount may not be recoverable. Our policy on impairment of long-lived assets and amortizable intangibles, which is included in Note 1, explains our methodology for assessing impairment of these assets. Assets held for sale are recorded at the lower of their carrying value or estimated fair value less costs to sell.

2019 impairment analyses – As of July 31, 2019, due to certain triggering events, we assessed for impairment the long-lived assets of our Financial Services Data-Driven Marketing and Small Business Services Web Services reporting units. As a result of the same factors that resulted in the goodwill impairment charge, we recorded pretax asset impairment charges of \$31,316 related to certain trade name, customer list and technology-based intangible assets in the Small Business Services Web Services reporting unit. We concluded that the long-lived assets of our Financial Services Data-Driven Marketing reporting unit were not impaired. During the quarter ended September 30, 2019, we also recorded a pretax asset impairment charge of \$1,923 related to an additional Financial Services customer list intangible asset. Due to a change in the related forecasted cash flows associated with the asset, we determined that it was fully impaired as of July 31, 2019. We utilized the discounted value of estimated future cash flows to estimate the fair values of these asset groups (level 3 fair value measurements).

2018 impairment analyses – During the fourth quarter of 2018, we performed a quantitative analysis of our Financial Services Data-Driven Marketing reporting unit. Revenue for this reporting unit was below our projections driven by higher mortgage lending rates, which result in less lending activity for our financial institution clients and thus, may cause them to reduce their marketing spending, as well as a large client electing to do certain of its marketing in-house. The quantitative analysis as of December 31, 2018 indicated that the estimated fair value of the reporting unit exceeded its carrying value by approximately \$105,000, or 36%. As such, no goodwill impairment charge was recorded for this reporting unit. The carrying value of this reporting unit's goodwill was \$186,388 as of December 31, 2018.

During the third quarter of 2018, we recorded pretax asset impairment charges of \$1,882 for Financial Services customer list intangible assets related to 2 distributors we acquired in 2015. Based on higher than anticipated customer attrition, we determined that the customer lists were partially impaired as of July 31, 2018. During the first quarter of 2018, we recorded a pre-tax asset impairment charge of \$2,149 related to a Small Business Services customer list intangible asset. Based on changes in the customer base of one of our small business distributors, we determined that the customer list asset was fully

impaired as of March 31, 2018. We utilized the discounted value of estimated future cash flows to estimate the fair values of these asset groups (level 3 fair value measurements).

2017 impairment analyses – During 2017, we recorded aggregate pretax asset impairment charges of \$8,250 related to a small business distributor that was classified as held for sale in the consolidated balance sheets prior to its sale during the second quarter of 2017. The impairment charges were calculated based on ongoing negotiations for the sale of the business and reduced its carrying value to its fair value less costs to sell by reducing the carrying value of the related customer list intangible asset. Further information regarding assets held for sale can be found in Note 3.

During the quarter ended September 30, 2017, we decided that we would no longer utilize our Small Business Services NEBS® trade name in the marketplace, and we recorded a pretax asset impairment charge of \$14,752 to write down the remaining book value of this trade name to a fair value of \$0. Also during the quarter ended September 30, 2017, we recorded pretax asset impairment charges of \$3,499 related to other long-lived assets within Small Business Services, primarily internal-use software related to an order capture system. During the third quarter of 2017, we signed a contract for customer relationship management services that resulted in our decision to no longer utilize a portion of this software. As such, the remaining net book value of the assets was written down to a fair value of \$0.

Information regarding the impairment analyses completed during each year was as follows:

<i>(in thousands)</i>	Fair value measurements using				Asset impairment charge
	Fair value as of measurement date	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)	
2019 analyses:					
Intangible assets (Small Business Services) ^{(1), (2)}	\$ 8,379	\$ —	\$ —	\$ 8,379	\$ 31,316
Customer list (Financial Services)	—	—	—	—	1,923
Goodwill					357,741
Total					<u>\$ 390,980</u>
2018 analyses:					
Indefinite-lived trade name (Small Business Services)	\$ —	\$ —	\$ —	\$ —	\$ 19,100
Customer list (Small Business Services)	—	—	—	—	2,149
Customer lists (Financial Services) ⁽¹⁾	4,223	—	—	4,223	1,882
Goodwill					78,188
Total					<u>\$ 101,319</u>
2017 analyses:					
Trade name (Small Business Services)	\$ —	\$ —	\$ —	\$ —	\$ 14,752
Assets held for sale (Small Business Services)	3,500	—	—	3,500	8,250
Other (Small Business Services)	—	—	—	—	3,499
Goodwill					28,379
Total					<u>\$ 54,880</u>

⁽¹⁾ The fair value presented is for the entire asset group that includes the impaired assets.

⁽²⁾ The impairment charge consisted of \$14,441 related to trade names, \$11,655 related to customer lists and \$5,220 related to technology-based intangible assets.

Acquisitions

For all acquisitions, we are required to measure the fair value of the net identifiable tangible and intangible assets and liabilities acquired. Information regarding our acquisitions can be found in Note 6 and information regarding the useful lives of acquired intangibles can be found in Note 3. The identifiable net assets acquired during the past 3 years were comprised primarily of customer list intangible assets, trade names, technology-based intangible assets and software. The fair value of the more significant acquired customer lists was estimated using the multi-period excess earnings method. This valuation model

estimates revenues and cash flows derived from the asset and then deducts portions of the cash flow that can be attributed to supporting assets, such as a trade name or fixed assets, that contributed to the generation of the cash flows. The resulting cash flow, which is attributable solely to the customer list asset, is then discounted at a rate of return commensurate with the risk of the asset to calculate a present value. The estimated fair value of the remainder of our acquired customer lists was estimated by discounting the estimated cash flows expected to be generated by the assets. Key assumptions used in these calculations included same-customer revenue growth rates, estimated earnings, estimated customer retention rates based on the acquirees' historical information and the discount rate.

The estimated fair value of the acquired trade names, technology-based intangibles and a portion of the acquired software was estimated using the relief from royalty method, which calculates the cost savings associated with owning rather than licensing the assets. Assumed royalty rates were applied to projected revenue for the estimated remaining useful lives of the assets to estimate the royalty savings. Royalty rates are selected based on the attributes of the asset, including its recognition and reputation in the industry, and in the case of trade names, with consideration of the specific profitability of the products sold under a trade name and supporting assets. The fair value of the remainder of the acquired software was estimated using the cost of reproduction method. The primary components of the software were identified and the estimated cost to reproduce the software was calculated based on historical data provided by the acquiree.

Recurring fair value measurements

Funds held for customers included cash equivalents and available-for-sale debt securities (Note 3). The cash equivalents consisted of a money market fund investment that is traded in an active market. Because of the short-term nature of the underlying investments, the cost of this investment approximates its fair value. Available-for-sale debt securities consisted of a mutual fund investment that invests in Canadian and provincial government securities, as well as investments in Canadian guaranteed investment certificates (GICs) with maturities of 1 year or less. The mutual fund is not traded in an active market and its fair value is determined by obtaining quoted prices in active markets for the underlying securities held by the fund. The fair value of the GICs approximated cost due to their relatively short duration. Unrealized gains and losses, net of tax, are included in accumulated other comprehensive loss on the consolidated balance sheets. The cost of securities sold is determined using the average cost method. Realized gains and losses are included in revenue on the consolidated statements of (loss) income and were not significant during the past 3 years.

Fair values of financial instruments

Information regarding the fair values of our financial instruments was as follows:

<i>(in thousands)</i>	Balance sheet location	December 31, 2019		Fair value measurements using		
		Carrying value	Fair value	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
<i>Measured at fair value through comprehensive (loss) income:</i>						
Cash equivalents	Funds held for customers	\$ 18,000	\$ 18,000	\$ 18,000	\$ —	\$ —
Available-for-sale debt securities	Funds held for customers	16,450	16,450	—	16,450	—
Derivative liability (Note 7)	Other non-current liabilities	(1,480)	(1,480)	—	(1,480)	—
<i>Amortized cost:</i>						
Cash	Cash and cash equivalents	73,620	73,620	73,620	—	—
Cash	Funds held for customers	83,191	83,191	83,191	—	—
Loans and notes receivable from Safeguard distributors	Other current and non-current assets	70,383	68,887	—	—	68,887
Long-term debt	Long-term debt	883,500	883,500	—	883,500	—

<i>(in thousands)</i>	Balance sheet location	December 31, 2018		Fair value measurements using		
		Carrying value	Fair value	Quoted prices in active markets for identical assets (Level 1)	Significant other observable inputs (Level 2)	Significant unobservable inputs (Level 3)
<i>Measured at fair value through comprehensive (loss) income:</i>						
Cash equivalents	Funds held for customers	\$ 16,000	\$ 16,000	\$ 16,000	\$ —	\$ —
Available-for-sale debt securities	Funds held for customers	15,463	15,463	—	15,463	—
<i>Amortized cost:</i>						
Cash	Cash and cash equivalents	59,740	59,740	59,740	—	—
Cash	Funds held for customers	69,519	69,519	69,519	—	—
Loans and notes receivable from Safeguard distributors	Other current and non-current assets	81,560	60,795	—	—	60,795
Long-term debt ⁽¹⁾	Long-term debt	910,000	910,000	—	910,000	—

⁽¹⁾ Amounts exclude capital lease obligations.

NOTE 9: RESTRUCTURING AND INTEGRATION EXPENSE

Restructuring and integration expense consists of costs related to the consolidation and migration of certain applications and processes, including our financial, sales and human resources management systems. It also includes costs related to the integration of acquired businesses into our systems and processes. These costs primarily consist of information technology consulting and project management services and internal labor, as well as other miscellaneous costs associated with our initiatives, such as training, travel and relocation. In addition, we recorded employee severance costs related to these initiatives, as well as our ongoing cost reduction initiatives, across functional areas. Our restructuring and integration activities increased in 2019, as we are currently pursuing several initiatives designed to focus our business behind our growth strategy and to increase our efficiency.

Restructuring and integration expense is reflected on the consolidated statements of (loss) income as follows for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
Total cost of revenue	\$ 3,562	\$ 1,466	\$ 568
Operating expenses	71,248	19,737	8,562
Restructuring and integration expense	<u>\$ 74,810</u>	<u>\$ 21,203</u>	<u>\$ 9,130</u>

The following presents restructuring and integration expense by segment. Corporate expenses are allocated to the segments based on the allocation methodology described in Note 19.

<i>(in thousands)</i>	Small Business Services	Financial Services	Direct Checks	Consolidated
2019	\$ 49,634	\$ 20,879	\$ 4,297	\$ 74,810
2018	10,837	10,087	279	21,203
2017	4,775	3,950	405	9,130

Restructuring and integration expense was comprised of the following for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
External consulting fees	\$ 45,638	\$ 8,509	\$ 516
Internal labor	12,115	4,654	1,127
Employee severance benefits	10,865	5,774	7,176
Other	6,192	2,266	311
Restructuring and integration expense	<u>\$ 74,810</u>	<u>\$ 21,203</u>	<u>\$ 9,130</u>

Our restructuring and integration accruals represent expected cash payments required to satisfy the remaining severance obligations to those employees already terminated and those expected to be terminated under our various initiatives. Restructuring and integration accruals of \$3,459 as of December 31, 2019 are included in accrued liabilities on the consolidated balance sheet. Restructuring and integration accruals of \$3,461 as of December 31, 2018 are reflected on the consolidated balance sheet as accrued liabilities of \$3,320 and other non-current liabilities of \$141. The majority of the employee reductions are expected to be completed in the first quarter of 2020, and we expect most of the related severance payments to be paid by the third quarter of 2020, utilizing cash from operations.

Changes in our restructuring and integration accruals were as follows:

<i>(in thousands)</i>	Employee severance benefits	Operating lease obligations	Total
Balance, December 31, 2016	\$ 4,181	\$ —	\$ 4,181
Charges	7,843	23	7,866
Reversals	(667)	—	(667)
Payments	(6,981)	(19)	(7,000)
Balance, December 31, 2017	4,376	4	4,380
Charges	7,672	597	8,269
Reversals	(1,898)	(71)	(1,969)
Payments	(6,971)	(248)	(7,219)
Balance, December 31, 2018	3,179	282	3,461
Charges	11,516	—	11,516
Reversals	(651)	—	(651)
Payments	(10,585)	—	(10,585)
Adoption of ASU No. 2016-02 ⁽¹⁾	—	(282)	(282)
Balance, December 31, 2019	\$ 3,459	\$ —	\$ 3,459

⁽¹⁾ Upon adoption of ASU No. 2016-02, *Leasing*, and related amendments on January 1, 2019 (Note 2), our operating lease obligation accrual was reversed and the related operating lease asset was analyzed for impairment in accordance with the new guidance.

The charges and reversals presented in the rollforward of our restructuring and integration accruals do not include items charged directly to expense as incurred, as those items are not reflected in accrued liabilities on the consolidated balance sheets.

NOTE 10: CHIEF EXECUTIVE OFFICER TRANSITION COSTS

In April 2018, we announced the retirement of Lee Schram, our former Chief Executive Officer (CEO). Mr. Schram remained employed under the terms of a transition agreement through March 1, 2019. Under the terms of this agreement, we provided certain benefits to Mr. Schram, including a transition bonus in the amount of \$2,000 that was paid in March 2019, accelerated vesting of certain restricted stock unit awards, and continued vesting and settlement of a pro-rata portion of outstanding performance share awards to the extent such awards were earned based on the attainment of performance goals. The modifications to Mr. Schram's share-based payment awards resulted in expense of \$2,088, which was largely recognized in 2018.

In conjunction with the CEO transition, we offered retention agreements to certain members of our management team under which each employee was entitled to receive a cash bonus equal to his or her annual base salary or up to 1.5 times his or her annual base salary if he or she remained employed during the retention period, generally from July 1, 2018 to December 31, 2019, and complied with certain covenants. The retention bonus was paid to an employee at the end of the retention period or earlier if his or her employment was terminated without cause before the end of the retention period. In addition to these expenses, we incurred certain other costs related to the CEO transition process, including executive search, legal, travel and board of directors fees in 2018. During 2019, we incurred consulting fees related to the evaluation of our strategic plan and we expensed the majority of our current CEO's signing bonus.

CEO transition costs are included in SG&A expense on the consolidated statements of (loss) income and were \$9,390 for 2019 and \$7,210 for 2018. Accruals for CEO transition costs were \$4,406 as of December 31, 2019 and were included in accrued liabilities on the consolidated balance sheet. Accruals for CEO transition costs as of December 31, 2018 were \$1,972 within accrued liabilities and \$1,808 within other non-current liabilities on the consolidated balance sheet.

NOTE 11: INCOME TAX PROVISION

(Loss) income before income taxes was comprised of the following for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
U.S.	\$ (161,733)	\$ 198,727	\$ 299,424
Foreign	(23,897)	13,904	13,403
(Loss) income before income taxes	<u>\$ (185,630)</u>	<u>\$ 212,631</u>	<u>\$ 312,827</u>

The components of the income tax provision were as follows for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
Current tax provision:			
Federal	\$ 36,967	\$ 57,117	\$ 104,079
State	7,400	11,319	12,996
Foreign	4,850	5,921	4,774
Total current tax provision	<u>49,217</u>	<u>74,357</u>	<u>121,849</u>
Deferred tax provision:			
Federal	(30,095)	(7,220)	(37,471)
State	(7,070)	(1,701)	(491)
Foreign	2,215	(2,435)	(1,215)
Total deferred tax provision	<u>(34,950)</u>	<u>(11,356)</u>	<u>(39,177)</u>
Income tax provision	<u>\$ 14,267</u>	<u>\$ 63,001</u>	<u>\$ 82,672</u>

The effective tax rate on pre-tax (loss) income reconciles to the U.S. federal statutory tax rate for the years ended December 31 as follows:

	2019	2018	2017
Income tax at federal statutory rate	21.0%	21.0%	35.0%
Goodwill impairment charge	(29.3%)	7.1%	1.5%
Change in valuation allowances ⁽¹⁾	(4.5%)	0.1%	(0.3%)
Net tax benefit of share-based compensation	(1.1%)	(0.8%)	(1.6%)
State income tax expense, net of federal income tax benefit	4.9%	3.0%	2.7%
Foreign tax rate differences	1.3%	0.4%	(0.3%)
Impact of Tax Cuts and Jobs Act	—	(0.8%)	(6.6%)
Qualified production activities deduction	—	—	(3.2%)
Other	—	(0.4%)	(0.8%)
Effective tax rate	<u>(7.7%)</u>	<u>29.6%</u>	<u>26.4%</u>

⁽¹⁾ During the quarter ended September 30, 2019, we recorded asset impairment charges related to certain intangible assets located in Australia (Note 8). As a result, we placed a full valuation allowance on the intangible-related deferred tax asset of \$8,432, as we do not expect that we will realize the benefit of this deferred tax asset.

In December 2017, U.S. tax reform was signed into law as the Tax Cuts and Jobs Act (the "2017 Tax Act"). This legislation included a broad range of tax reforms, including changes to corporate tax rates, business deductions and international tax provisions. This legislation resulted in a net benefit of approximately \$20,500 to our 2017 income tax provision. This amount included the net tax benefit from the remeasurement of deferred income taxes to the new federal statutory tax rate of 21%, which was effective for us on January 1, 2018, and revised state income tax rates for those states we expected to follow the provisions of the 2017 Tax Act, partially offset by the establishment of a liability for repatriation toll charges related to undistributed foreign earnings and profits. During 2017, reasonable estimates were used to determine certain impacts of the 2017 Tax Act, including our 2017 deferred activity and the amount of post-1986 foreign deferred earnings subject to the repatriation toll charge. We finalized our accounting for the 2017 Tax Act during the fourth quarter of 2018. Our 2018 income tax provision was reduced

\$1,700 for adjustments to our accounting for the 2017 Tax Act, primarily a reduction in the amount accrued for the repatriation toll charge.

A reconciliation of the beginning and ending amount of unrecognized tax benefits, excluding accrued interest and penalties and the federal benefit of deductible state income tax, was as follows:

<i>(in thousands)</i>	2019	2018	2017
Balance, beginning of year	\$ 4,801	\$ 3,795	\$ 7,373
Additions for tax positions of current year	364	315	378
Additions for tax positions of prior years	546	1,177	659
Reductions for tax positions of prior years	(887)	(108)	(4,389)
Settlements	(341)	—	—
Lapse of statutes of limitations	(314)	(378)	(226)
Balance, end of year	<u>\$ 4,169</u>	<u>\$ 4,801</u>	<u>\$ 3,795</u>

If the unrecognized tax benefits as of December 31, 2019 were recognized in the consolidated financial statements, income tax expense would decrease \$4,169. Accruals for interest and penalties, excluding the tax benefits of deductible interest, were \$935 as of December 31, 2019 and \$1,156 as of December 31, 2018. Our income tax provision included expense for interest and penalties of \$605 in 2019 and \$110 in 2018 and included a reduction for interest and penalties of \$284 in 2017. Within the next 12 months, it is reasonably possible that our unrecognized tax benefits will change in the range of a decrease of \$2,300 to an increase of \$1,900 as we attempt to resolve certain federal and state tax matters or as federal and state statutes of limitations expire. Due to the nature of the underlying liabilities and the extended time frame often needed to resolve income tax uncertainties, we cannot provide reliable estimates of the amount or timing of cash payments that may be required to settle these liabilities.

The statute of limitations for federal tax assessments for 2015 and prior years has expired. Audits of our federal income tax returns through 2015 have been completed by the Internal Revenue Service (IRS). Our 2016 through 2018 returns and our 2019 return, when filed, are subject to IRS examination. In general, income tax returns for the years 2015 through 2019 remain subject to examination by foreign, state and city tax jurisdictions. In the event that we have determined not to file income tax returns with a particular state or city, all years remain subject to examination by the tax jurisdiction.

The ultimate outcome of tax matters may differ from our estimates and assumptions. Unfavorable settlement of any particular issue would require the use of cash and could result in increased income tax expense. Favorable resolution would result in reduced income tax expense.

Tax-effected temporary differences that gave rise to deferred tax assets and liabilities as of December 31 were as follows:

<i>(in thousands)</i>	2019		2018	
	Deferred tax assets	Deferred tax liabilities	Deferred tax assets	Deferred tax liabilities
Goodwill ⁽¹⁾	\$ —	\$ 16,424	\$ —	\$ 47,993
Revenue recognition	—	4,752	—	3,185
Prepaid assets	—	3,830	—	3,469
Property, plant and equipment	—	3,200	—	1,739
Employee benefit plans	—	2,747	1,420	—
Installment sales treatment of notes receivable	—	1,171	—	3,054
Intangible assets ⁽¹⁾	14,900	—	—	3,780
Operating leases	11,409	10,578	—	—
Net operating loss, tax credit and capital loss carryforwards	7,698	—	9,380	—
Reserves and accruals	6,154	—	8,893	—
Inventories	2,595	—	2,043	—
All other	2,756	3,452	3,237	3,858
Total deferred taxes	45,512	46,154	24,973	67,078
Valuation allowances	(10,349)	—	(1,689)	—
Net deferred taxes	\$ 35,163	\$ 46,154	\$ 23,284	\$ 67,078

⁽¹⁾ The change in these deferred income taxes in 2019, as compared to 2018, was primarily the result of asset impairment charges recorded during 2019. Further information can be found in Note 8.

The valuation allowances as of December 31, 2019 and December 31, 2018 related primarily to intangible-related deferred tax assets of our Australian operations, capital loss carryforwards in Canada and net operating loss carryforwards in various state jurisdictions that we do not currently expect to fully realize. Changes in our valuation allowances for the years ended December 31 were as follows:

<i>(in thousands)</i>	2019	2018	2017
Balance, beginning of year	\$ (1,689)	\$ (1,518)	\$ (2,545)
(Expense) benefit from change in allowances	(8,336)	(290)	1,015
Foreign currency translation	(324)	119	12
Balance, end of year	\$ (10,349)	\$ (1,689)	\$ (1,518)

As of December 31, 2019, deferred income taxes have not been recognized on unremitted earnings of our foreign subsidiaries, as these amounts are intended to be reinvested indefinitely in the operations of those subsidiaries. If we were to repatriate all of our foreign cash and cash equivalents into the U.S. at one time, the tax effects would generally be limited to foreign withholding taxes on any distributions. As of December 31, 2019, the amount of cash and cash equivalents held by our foreign subsidiaries was \$69,046, primarily in Canada.

As of December 31, 2019, we had the following net operating loss, capital loss and tax credit carryforwards:

- state net operating loss carryforwards and tax credit carryforwards of \$63,169 that expire at various dates up to 2048;
- foreign capital loss carryforwards of \$4,891 that do not expire;
- foreign research tax credit carryforwards of \$2,035 that expire at various dates up to 2036; and
- federal net operating loss carryforwards of \$1,451 that expire at various dates between 2025 and 2029.

NOTE 12: SHARE-BASED COMPENSATION PLANS

Our employee share-based compensation plans consist of our employee stock purchase plan and our long-term incentive plan. Effective May 2, 2017, our shareholders approved the Deluxe Corporation 2017 Long-Term Incentive Plan, simultaneously terminating our previous plan. Under this plan, 5.0 million shares of common stock plus any shares released as a result of the

forfeiture or termination of awards issued under our prior plan are reserved for issuance, with 4.1 million shares remaining available for issuance as of December 31, 2019. Full value awards such as restricted stock, restricted stock units and performance share awards reduce the number of shares available for issuance by a factor of 2.23, or if such an award were forfeited or terminated without delivery of the shares, the number of shares that again become eligible for issuance would be multiplied by a factor of 2.23. Under our current and previous plans, we have granted non-qualified stock options, restricted stock units, restricted shares and performance share awards. Our current plan also allows for the issuance of stock appreciation rights, which we have not granted as of December 31, 2019. Our policy regarding the recognition of compensation expense for employee share-based awards can be found in Note 1.

The following amounts were recognized in our consolidated statements of (loss) income for share-based compensation awards for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
Restricted shares and restricted stock units	\$ 13,411	\$ 5,232	\$ 6,533
Performance share awards	2,907	4,502	4,782
Stock options	2,954	3,143	3,270
Employee stock purchase plan	430	501	524
Total share-based compensation expense	<u>\$ 19,702</u>	<u>\$ 13,378</u>	<u>\$ 15,109</u>
Income tax benefit	<u>\$ (5,350)</u>	<u>\$ (3,946)</u>	<u>\$ (5,152)</u>

As of December 31, 2019, the total compensation expense for unvested awards not yet recognized in our consolidated statements of (loss) income was \$28,891, net of the effect of estimated forfeitures. This amount is expected to be recognized over a weighted-average period of 2.2 years.

Non-qualified stock options – All options allow for the purchase of shares of common stock at prices equal to the stock's market value at the date of grant. Options become exercisable beginning 1 year after the grant date, and beginning in 2019, one-fourth vest each year over 4 years. Awards granted prior to 2019 vest one-third each year over 3 years. Beginning in 2019, options may be exercised up to 10 years following the grant date. Awards granted prior to 2019 have a 7 year life. Beginning 1 year after the grant date, in the case of qualified retirement, death or disability, options vest immediately and the period over which the options can be exercised is shortened. Beginning 1 year after the grant date, in the case of involuntary termination without cause, a pro-rata portion of the options vest immediately and the period over which the options can be exercised is shortened. Employees forfeit unvested options when they voluntarily terminate their employment with the company, and they have up to 3 months to exercise vested options before they are canceled. In the case of involuntary termination with cause, the entire unexercised portion of the award is canceled. All options may vest immediately upon a change of control, as defined in the award agreement. The following weighted-average assumptions were used in the Black-Scholes option pricing model to determine the fair value of stock options granted:

	2019	2018	2017
Risk-free interest rate	2.3%	2.7%	1.6%
Dividend yield	2.7%	2.0%	1.6%
Expected volatility	24.5%	23.0%	23.7%
Weighted-average option life (in years)	5.3	3.9	3.7

The risk-free interest rate for periods within the expected option life is based on the U.S. Treasury yield curve in effect at the grant date. The dividend yield is estimated over the expected life of the option based on historical dividends paid. Expected volatility is based on the historical volatility of our stock over the most recent historical period equivalent to the expected life of the option. The expected option life is the average length of time over which we expect the employee groups will exercise their options, based on historical experience with similar grants.

Each option is convertible into 1 share of common stock upon exercise. Information regarding options issued under the current and all previous plans was as follows:

	Number of options <i>(in thousands)</i>	Weighted-average exercise price per option	Aggregate intrinsic value <i>(in thousands)</i>	Weighted-average remaining contractual term <i>(in years)</i>
Outstanding, December 31, 2016	1,251	\$ 47.68		
Granted	270	75.30		
Exercised	(347)	38.72		
Forfeited or expired	(35)	62.19		
Outstanding, December 31, 2017	1,139	56.51		
Granted	519	62.12		
Exercised	(339)	42.55		
Forfeited or expired	(74)	66.85		
Outstanding, December 31, 2018	1,245	62.04		
Granted	644	44.72		
Exercised	(21)	32.42		
Forfeited or expired	(521)	62.75		
Outstanding, December 31, 2019	1,347	53.92	\$ 3,311	6.1
Exercisable at December 31, 2017	555	\$ 47.42		
Exercisable at December 31, 2018	472	59.90		
Exercisable at December 31, 2019	485	61.44	\$ 292	2.7

The weighted-average grant-date fair value of options granted was \$8.30 per option for 2019, \$10.98 per option for 2018 and \$12.81 per option for 2017. The intrinsic value of a stock award is the amount by which the fair value of the underlying stock exceeds the exercise price of the award. The total intrinsic value of options exercised was \$292 for 2019, \$10,007 for 2018 and \$11,699 for 2017.

Restricted stock units – During 2019, we increased our use of restricted stock unit awards. We granted awards to all North American employees, we paid a portion of employee bonuses previously settled in cash in the form of restricted stock units and we granted certain other awards under our long-term incentive plan. These awards generally vest over 3 years. Additionally, certain management employees have the option to receive a portion of their bonus payment in the form of restricted stock units. When employees elect this payment method, we provide an additional matching amount of restricted stock units equal to 100% of the restricted stock units earned under the bonus plan. These awards vest 2 years from the date of grant. In the case of qualified retirement, death, disability or change of control, the awards vest immediately. In the case of involuntary termination without cause or voluntary termination, employees receive a cash payment for the units earned under the bonus plan, but forfeit the company-provided matching amount.

In addition to awards granted to employees, non-employee members of our board of directors can elect to receive all or a portion of their fees in the form of restricted stock units. Directors are issued shares in exchange for the units upon the earlier of the tenth anniversary of February 1st of the year following the year in which the non-employee director ceases to serve on the board or such other objectively determinable date pre-elected by the director.

Each restricted stock unit is convertible into 1 share of common stock upon completion of the vesting period. Information regarding our restricted stock units was as follows:

	Number of units <i>(in thousands)</i>	Weighted-average grant date fair value per unit	Weighted-average remaining contractual term <i>(in years)</i>
Outstanding at December 31, 2016	139	\$ 37.99	
Granted	16	73.27	
Vested	(43)	43.18	
Forfeited	(3)	57.18	
Outstanding at December 31, 2017	109	38.31	
Granted	110	52.32	
Vested	(22)	48.14	
Forfeited	(2)	74.96	
Outstanding at December 31, 2018	195	45.41	
Granted	611	44.73	
Vested	(93)	49.31	
Forfeited	(49)	45.40	
Outstanding at December 31, 2019	664	44.35	2.3

Of the awards outstanding as of December 31, 2019, 15 thousand restricted stock units with a value of \$710 were included in accrued liabilities and other non-current liabilities on the consolidated balance sheet. As of December 31, 2019, these units had a fair value of \$47.00 per unit and a weighted-average remaining contractual term of 9 months.

The total fair value of restricted stock units that vested was \$4,374 for 2019, \$1,619 for 2018 and \$3,161 for 2017. We made cash payments of \$263 during 2019, \$78 during 2018 and \$421 during 2017 to settle share-based liabilities.

Restricted shares – For restricted share awards granted to employees under our current long-term incentive plan, in most cases one-fourth of the shares vest each year over 4 years. Such awards granted under our previous plan vest in their entirety at the end of the 3 year vesting period. The restrictions lapse immediately in the case of qualified retirement, death or disability, or in the event of a change in control where replacement securities are not awarded. In the case of involuntary termination without cause, restrictions on a pro-rata portion of the shares lapse based on how much of the vesting period has passed. In the case of voluntary termination of employment or termination with cause, the unvested restricted shares are forfeited.

Information regarding unvested restricted shares was as follows:

	Number of shares <i>(in thousands)</i>	Weighted-average grant date fair value per share	Weighted-average remaining contractual term <i>(in years)</i>
Unvested at December 31, 2016	220	\$ 56.43	
Granted	68	74.84	
Vested	(99)	52.41	
Forfeited	(8)	61.37	
Unvested at December 31, 2017	181	65.33	
Granted	77	71.29	
Vested	(76)	69.73	
Forfeited	(14)	66.24	
Unvested at December 31, 2018	168	66.02	
Vested	(117)	63.15	
Forfeited	(25)	73.62	
Unvested at December 31, 2019	26	71.61	1.0

The total fair value of restricted shares that vested was \$5,608 for 2019, \$5,375 for 2018 and \$7,452 for 2017.

Performance share awards – Our performance share awards have a 3-year vesting period. Shares will be issued at the end of the vesting period if performance targets relating to revenue and total shareholder return are achieved. If employment is terminated for any reason prior to the 1-year anniversary of the commencement of the performance period, the award is forfeited. On or after the 1-year anniversary of the commencement of the performance period, a pro-rata portion of the shares awarded at the end of the performance period is issued in the case of qualified retirement, death, disability, involuntary termination without cause or resignation for good reason, as defined in the agreement. The following weighted-average assumptions were used in the Monte Carlo simulation model in determining the fair value of market-based performance shares granted:

	2019	2018	2017
Risk-free interest rate	2.3%	2.4%	1.4%
Dividend yield	3.1%	1.6%	1.7%
Expected volatility	26.8%	21.6%	21.9%

The risk-free interest rate for periods within the expected award life is based on the U.S. Treasury yield curve in effect at the grant date. The dividend yield is estimated over the expected life of the award based on historical dividends paid. Expected volatility is based on the historical volatility of our stock.

Information regarding unvested performance shares was as follows:

	Performance shares <i>(in thousands)</i>	Weighted-average grant date fair value per share	Weighted-average remaining contractual term <i>(in years)</i>
Unvested at December 31, 2016	236	\$ 55.15	
Granted ⁽¹⁾	83	75.31	
Forfeited	(9)	64.85	
Vested	(60)	50.17	
Adjustment for performance results achieved ⁽²⁾	5	50.34	
Unvested at December 31, 2017	255	63.42	
Granted ⁽¹⁾	91	74.49	
Forfeited	(48)	59.32	
Vested	(45)	67.10	
Adjustment for performance results achieved ⁽²⁾	(3)	67.11	
Unvested at December 31, 2018	250	67.54	
Granted ⁽¹⁾	151	41.79	
Forfeited	(38)	54.42	
Vested	(118)	59.67	
Adjustment for performance results achieved ⁽²⁾	7	54.42	
Unvested at December 31, 2019	252	57.64	1.5

⁽¹⁾ Reflects awards granted assuming achievement of performance goals at target.

⁽²⁾ Reflects the difference between the awards earned at the end of the performance period and the target number of shares.

Employee stock purchase plan – During 2019, 65 thousand shares were issued under this plan at prices of \$39.92 and \$37.93. During 2018, 53 thousand shares were issued under this plan at prices of \$63.13 and \$50.09. During 2017, 46 thousand shares were issued under this plan at prices of \$61.92 and \$61.37.

NOTE 13: EMPLOYEE COMPENSATION PLANS

Profit sharing/401(k) plan – Through December 31, 2019, we maintained a 401(k)/profit sharing plan to provide retirement benefits for certain employees. The plan covers a majority of full-time employees, as well as some part-time employees. Employees are eligible to participate in the plan after completing 30 days of service. Effective January 1, 2020, the profit sharing component of the plan was discontinued.

401(k) contributions are made by both employees and Deluxe. Employees may contribute up to 50% of eligible wages, subject to IRS limitations and the terms and conditions of the plan. For the majority of employees, we match 100% of the first 1% of wages contributed and 50% of the next 5% of wages contributed, beginning on the first day of the quarter following an employee's first full year of service. Profit sharing contributions were made solely by Deluxe and varied based on the company's performance. All employee and employer contributions are remitted to the plan's trustee. Benefits provided by the plan are paid from accumulated funds of the trust.

Employees are provided a broad range of investment options to choose from when investing their 401(k)/profit sharing plan funds. Investing in our common stock is not one of these options, although funds selected by employees may at times hold our common stock.

Cash bonus programs – We provide short-term cash bonus programs under which employees may receive cash bonus payments based on our performance for a given fiscal year. Payments earned are paid directly to employees shortly after the end of the year.

Expense recognized in the consolidated statements of (loss) income for these plans was as follows for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
Performance-based compensation plans ⁽¹⁾	\$ 21,143	\$ 20,297	\$ 22,085
401(k) expense	10,176	9,686	9,023

⁽¹⁾ Excludes expense for share-based compensation, which is discussed in Note 12.

Deferred compensation plan – We have a non-qualified deferred compensation plan that allows eligible employees to defer a portion of their compensation. Participants can elect to defer up to 100% of their base salary plus up to 50% of their bonus for the year. The compensation deferred under this plan is credited with earnings or losses measured by the mirrored rate of return on phantom investments elected by plan participants, which are similar to the investments available for funds invested under our 401(k)/profit sharing plan. Each participant is fully vested in all deferred compensation and earnings. A participant may elect to receive deferred amounts in a lump-sum payment or in monthly installments upon termination of employment or disability. Our total liability under this plan was \$5,036 as of December 31, 2019 and \$4,458 as of December 31, 2018. These amounts are reflected in accrued liabilities and other non-current liabilities on the consolidated balance sheets. We hold investments in an irrevocable rabbi trust for our deferred compensation plan. These assets consist of investments in company-owned life insurance policies, which are included in long-term investments on the consolidated balance sheets, and totaled \$11,204 as of December 31, 2019 and \$10,831 as of December 31, 2018.

NOTE 14: POSTRETIREMENT BENEFITS

We have historically provided certain health care benefits for a large number of retired U.S. employees. Employees hired prior to January 1, 2002 become eligible for benefits if they attain the appropriate years of service and age prior to retirement. Employees hired on January 1, 2002 or later are not eligible to participate in the plan. In addition to our retiree health care plan, we also have a U.S. supplemental executive retirement plan (SERP). The SERP is no longer an active plan. It is not adding new participants and all of the current participants are retired. The SERP has no plan assets, but our obligation is fully funded by investments in company-owned life insurance policies.

Obligations and funded status – The following tables summarize the change in benefit obligation, plan assets and funded status during 2019 and 2018:

<i>(in thousands)</i>	Postretirement benefit plan	Pension plan⁽¹⁾
Change in benefit obligation:		
Benefit obligation, December 31, 2017	\$ 87,594	\$ 3,398
Interest cost	2,529	97
Net actuarial gain	(9,231)	(23)
Benefits paid from plan assets and company funds	(7,175)	(324)
Benefit obligation, December 31, 2018	73,717	3,148
Interest cost	2,617	111
Net actuarial loss	5,012	316
Benefits paid from plan assets and company funds	(8,171)	(324)
Benefit obligation, December 31, 2019	<u>\$ 73,175</u>	<u>\$ 3,251</u>
Change in plan assets:		
Fair value of plan assets, December 31, 2017	\$ 127,443	\$ —
Return on plan assets	(6,663)	—
Benefits paid	(5,804)	—
Fair value of plan assets, December 31, 2018	114,976	—
Return on plan assets	21,179	—
Benefits paid	(6,237)	—
Fair value of plan assets, December 31, 2019	<u>\$ 129,918</u>	<u>\$ —</u>
Funded status, December 31, 2018	\$ 41,259	\$ (3,148)
Funded status, December 31, 2019	<u>\$ 56,743</u>	<u>\$ (3,251)</u>

⁽¹⁾ The accumulated benefit obligation equals the projected benefit obligation.

The funded status of our plans was recognized in the consolidated balance sheets as of December 31 as follows:

<i>(in thousands)</i>	Postretirement benefit plan		Pension plan	
	2019	2018	2019	2018
Other non-current assets	\$ 56,743	\$ 41,259	\$ —	\$ —
Accrued liabilities	—	—	324	324
Other non-current liabilities	—	—	2,927	2,824

Amounts included in accumulated other comprehensive loss as of December 31 that have not been recognized as components of postretirement benefit income were as follows:

<i>(in thousands)</i>	2019	2018
Unrecognized prior service credit	\$ 12,756	\$ 14,178
Unrecognized net actuarial loss	(45,319)	(57,436)
Tax effect	4,157	6,729
Amount recognized in accumulated other comprehensive loss, net of tax	<u>\$ (28,406)</u>	<u>\$ (36,529)</u>

The unrecognized prior service credit relates to our postretirement benefit plan and is a result of previous plan amendments that reduced the accumulated postretirement benefit obligation. A reduction is first used to reduce any existing unrecognized prior service cost, then to reduce any remaining unrecognized transition obligation. The excess is the unrecognized prior service credit. The prior service credit is being amortized on the straight-line basis over a weighted-average period of 21 years based on the average remaining life expectancy of plan participants at the time of the plan amendment.

Unrecognized net actuarial gains and losses result from experience different from that assumed and from changes in assumptions. The net actuarial loss generated during 2019 was primarily due to the decrease in the discount rate used to discount the benefit obligation. The net actuarial gain generated during 2018 was primarily due to favorable claims experience and an increase in the discount rate used to discount the benefit obligation. Unrecognized actuarial gains and losses for our postretirement benefit plan are being amortized over the average remaining life expectancy of inactive plan participants, as a large percentage of the plan participants are classified as inactive. This amortization period is currently 14.1 years.

Postretirement benefit income – Postretirement benefit income for the years ended December 31 consisted of the following components:

<i>(in thousands)</i>	2019	2018	2017
Interest cost	\$ 2,727	\$ 2,626	\$ 2,896
Expected return on plan assets	(6,957)	(7,737)	(7,128)
Amortization of prior service credit	(1,421)	(1,421)	(1,421)
Amortization of net actuarial losses	3,223	2,884	3,637
Net periodic benefit income	<u>\$ (2,428)</u>	<u>\$ (3,648)</u>	<u>\$ (2,016)</u>

Actuarial assumptions – In measuring benefit obligations as of December 31, the following discount rate assumptions were used:

	Postretirement benefit plan		Pension plan	
	2019	2018	2019	2018
Discount rate	3.03%	4.13%	2.76%	4.01%

In measuring net periodic benefit income for the years ended December 31, the following assumptions were used:

	Postretirement benefit plan			Pension plan		
	2019	2018	2017	2019	2018	2017
Discount rate	4.13%	3.46%	3.81%	4.01%	3.35%	3.66%
Expected return on plan assets	6.25%	6.25%	6.25%	—	—	—

The discount rate assumption is based on the rates of return on high-quality, fixed-income instruments currently available whose cash flows approximate the timing and amount of expected benefit payments. In determining the expected long-term rate of return on plan assets, we utilize our historical returns and then adjust these returns for estimated inflation and projected market returns. Our inflation assumption is primarily based on analysis of historical inflation data.

In measuring benefit obligations as of December 31 for our postretirement benefit plan, the following assumptions for health care cost trend rates were used:

	2019		2018		2017	
	Participants under age 65	Participants age 65 and older	Participants under age 65	Participants age 65 and older	Participants under age 65	Participants age 65 and older
Health care cost trend rate assumed for next year	7.40%	8.40%	7.70%	8.70%	7.90%	9.10%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	4.50%	4.50%	4.50%	4.50%	4.50%	4.50%
Year that the rate reaches the ultimate trend rate	2029	2029	2029	2029	2025	2025

Plan assets – The allocation of plan assets by asset category as of December 31 was as follows:

	Postretirement benefit plan	
	2019	2018
U.S. large capitalization equity securities	24%	23%
Mortgage-backed securities	24%	25%
International equity securities	19%	18%
U.S. corporate debt securities	15%	20%
Government debt securities	14%	11%
U.S. small and mid-capitalization equity securities	4%	3%
Total	100%	100%

Our postretirement benefit plan has assets that are intended to meet long-term obligations. In order to meet these obligations, we employ a total return investment approach that considers cash flow needs and balances long-term projected returns against expected asset risk, as measured using projected standard deviations. Risk tolerance is established through consideration of projected plan liabilities, the plan's funded status, projected liquidity needs and our financial condition.

The target asset allocation percentages for our postretirement benefit plan are based on our liability and asset projections. The targeted allocation of plan assets is 55% fixed income securities, 24% large capitalization equity securities, 18% international equity securities and 3% small and mid-capitalization equity securities.

Information regarding fair value measurements of plan assets was as follows as of December 31, 2019:

	Fair value measurements using				Fair value as of December 31, 2019
	Quoted prices in active markets for identical assets	Significant other observable inputs	Significant unobservable inputs	Investments measured at net asset value	
	(Level 1)	(Level 2)	(Level 3)		
<i>(in thousands)</i>					
U.S. large capitalization equity securities	\$ —	\$ 30,990	\$ —	\$ —	\$ 30,990
Mortgage-backed securities	—	13,060	—	17,768	30,828
International equity securities	20,859	3,173	—	—	24,032
U.S. corporate debt securities	—	14,771	—	5,184	19,955
Government debt securities	—	18,776	—	—	18,776
U.S. small and mid-capitalization equity securities	4,228	363	—	—	4,591
Other debt securities	529	217	—	—	746
Plan assets	\$ 25,616	\$ 81,350	\$ —	\$ 22,952	\$ 129,918

Information regarding fair value measurements of plan assets was as follows as of December 31, 2018:

<i>(in thousands)</i>	Fair value measurements using				Fair value as of December 31, 2018
	Quoted prices in active markets for identical assets	Significant other observable inputs	Significant unobservable inputs	Investments measured at net asset value	
	(Level 1)	(Level 2)	(Level 3)		
U.S. large capitalization equity securities	\$ —	\$ —	\$ —	\$ 26,240	\$ 26,240
Mortgage-backed securities	—	13,593	—	15,138	28,731
International equity securities	20,261	298	—	—	20,559
U.S. corporate debt securities	6,489	12,468	—	3,594	22,551
Government debt securities	—	12,738	—	—	12,738
U.S. small and mid-capitalization equity securities	3,259	27	—	551	3,837
Other debt securities	(6)	326	—	—	320
Plan assets	<u>\$ 30,003</u>	<u>\$ 39,450</u>	<u>\$ —</u>	<u>\$ 45,523</u>	<u>\$ 114,976</u>

The fair value of Level 2 mortgage-backed securities is estimated using pricing models with inputs derived principally from observable market data. The fair value of our other Level 2 debt securities is typically estimated using pricing models, quoted prices of securities with similar characteristics or discounted cash flow calculations that maximize observable inputs, such as current yields for similar instruments adjusted for trades and other pertinent market information. Our policy is to recognize transfers between fair value levels as of the end of the reporting period in which the transfer occurred.

Cash flows – We made no contributions to plan assets during the past 3 years.

We have fully funded the SERP obligation with investments in company-owned life insurance policies. The cash surrender value of these policies is included in long-term investments on the consolidated balance sheets and totaled \$7,136 as of December 31, 2019 and \$6,869 as of December 31, 2018.

The following benefit payments are expected to be paid during the years indicated:

<i>(in thousands)</i>	Postretirement benefit plan	Pension plan
2020	\$ 6,089	\$ 320
2021	6,040	320
2022	5,934	310
2023	5,767	300
2024	5,562	290
2025 - 2029	24,427	1,280

NOTE 15: DEBT

Debt outstanding was comprised of the following at December 31:

<i>(in thousands)</i>	2019	2018
Amount drawn on revolving credit facility	\$ 883,500	\$ 910,000
Capital lease obligations ⁽¹⁾	—	1,864
Long-term debt, principal amount	883,500	911,864
Less current portion of long-term debt	—	(791)
Long-term debt	883,500	911,073
Current portion of capital lease obligations ⁽¹⁾	—	791
Long-term debt due within one year	—	791
Total debt	<u>\$ 883,500</u>	<u>\$ 911,864</u>

⁽¹⁾ Upon adoption of ASU No. 2016-02, *Leasing*, and related amendments on January 1, 2019 (Note 2), we reclassified our capital lease obligations, now known as finance lease obligations, to accrued liabilities and other non-current liabilities on the consolidated balance sheet.

There are currently no limitations on the amount of dividends and share repurchases under the terms of our credit agreement. However, if our leverage ratio, defined as total debt less unrestricted cash to EBITDA, should exceed 2.75 to 1, there would be an annual limitation on the amount of dividends and share repurchases.

As of December 31, 2018, we had a revolving credit facility in the amount of \$950,000. In January 2019, we increased the credit facility by \$200,000, bringing the total availability to \$1,150,000, subject to increase under the credit agreement to an aggregate amount not exceeding \$1,425,000. The credit facility matures in March 2023. Our quarterly commitment fee ranges from 0.175% to 0.35% based on our leverage ratio. Amounts drawn under the credit facility had a weighted-average interest rate of 3.03% as of December 31, 2019 and 3.79% as of December 31, 2018. In July 2019, we executed an interest rate swap to convert \$200,000 of the amount drawn under the credit facility to fixed rate debt. Further information can be found in Note 7.

Borrowings under the credit agreement are collateralized by substantially all of our personal and intangible property. The credit agreement governing our credit facility contains customary covenants regarding limits on levels of subsidiary indebtedness and capital expenditures, liens, investments, acquisitions, certain mergers, certain asset sales outside the ordinary course of business and change in control as defined in the agreement. The agreement also requires us to maintain certain financial ratios, including a maximum leverage ratio of 3.5 and a minimum ratio of consolidated earnings before interest and taxes to consolidated interest expense, as defined in the credit agreement, of 3.0.

Daily average amounts outstanding under our credit facility were as follows for the years ended December 31:

<i>(in thousands)</i>	2019	2018	2017
Revolving credit facility:			
Daily average amount outstanding	\$ 925,715	\$ 731,110	\$ 436,588
Weighted-average interest rate	3.54%	3.24%	2.55%
Term loan facility: ⁽¹⁾			
Daily average amount outstanding	\$ —	\$ 63,638	\$ 315,862
Weighted-average interest rate	—	2.97%	2.57%

⁽¹⁾ During 2018 and 2017, we had borrowings outstanding under a variable rate term loan facility. These amounts were repaid in March 2018.

As of December 31, 2019, amounts were available for borrowing under our revolving credit facility as follows:

<i>(in thousands)</i>	Total available
Revolving credit facility commitment	\$ 1,150,000
Amount drawn on revolving credit facility	(883,500)
Outstanding letters of credit ⁽¹⁾	(5,408)
Net available for borrowing as of December 31, 2019	<u>\$ 261,092</u>

⁽¹⁾ We use standby letters of credit primarily to collateralize certain obligations related to our self-insured workers' compensation claims, as well as claims for environmental matters, as required by certain states. These letters of credit reduce the amount available for borrowing under our revolving credit facility.

NOTE 16: LEASES

We have entered into operating leases for the majority of our facilities. These real estate leases have remaining terms of up to 10 years, with a weighted-average remaining term of 5.4 years as of December 31, 2019. We utilize leases for these facilities to limit our exposure to risks related to ownership, such as fluctuations in real estate prices, and to maintain flexibility in our real estate utilization. We have also entered into operating leases for certain equipment, primarily production printers and data center equipment. Certain of our leases include options to extend the lease term. The impact of renewal periods was not significant to the amounts recorded for operating lease assets and liabilities.

We have entered into finance leases, formerly known as capital leases, for certain information technology hardware. The net book value of the related lease assets and the related lease liabilities were not significant as of December 31, 2019 or December 31, 2018.

Operating lease expense was \$19,113 for 2019. Rental expense related to operating leases was \$23,928 for 2018 and \$19,839 for 2017. Additional information regarding our operating leases for 2019 was as follows:

<i>(in thousands)</i>	2019
Operating cash outflows	\$ 17,737
Lease assets obtained during the period in exchange for lease obligations	11,637
	December 31, 2019
Operating lease assets	\$ 44,372
Accrued liabilities	\$ 12,898
Operating lease liabilities	33,585
Total operating lease liabilities	<u>\$ 46,483</u>
Weighted-average remaining lease term (in years)	5.1
Weighted-average discount rate	3.4%

Maturities of operating lease liabilities were as follows:

<i>(in thousands)</i>	Operating lease obligations
2020	\$ 13,970
2021	11,334
2022	8,397
2023	4,527
2024	3,319
Thereafter	9,163
Total lease payments	50,710
Less imputed interest	(4,227)
Present value of lease payments	<u>\$ 46,483</u>

NOTE 17: OTHER COMMITMENTS AND CONTINGENCIES

Indemnifications – In the normal course of business, we periodically enter into agreements that incorporate general indemnification language. These indemnification provisions generally encompass third-party claims arising from our products and services, including, without limitation, service failures, breach of security, intellectual property rights, governmental regulations and/or employment-related matters. Performance under these indemnities would generally be triggered by our breach of the terms of the contract. In disposing of assets or businesses, we often provide representations, warranties and/or indemnities to cover various risks including, for example, unknown damage to the assets, environmental risks involved in the sale of real estate, liability to investigate and remediate environmental contamination at waste disposal sites and manufacturing facilities, and unidentified tax liabilities and legal matters related to periods prior to disposition. We do not have the ability to estimate the potential liability from such indemnities because they relate to unknown conditions. However, we do not believe that any liability under these indemnities would have a material adverse effect on our financial position, annual results of operations or annual cash flows. We have recorded liabilities for known indemnifications related to environmental matters. These liabilities were not significant as of December 31, 2019 or December 31, 2018.

Self-insurance – We are self-insured for certain costs, primarily workers' compensation claims and medical and dental benefits for active employees and those employees on long-term disability. The liabilities associated with these items represent our best estimate of the ultimate obligations for reported claims plus those incurred, but not reported, and totaled \$7,576 as of December 31, 2019 and \$6,627 as of December 31, 2018. These accruals are included in accrued liabilities and other non-current liabilities on the consolidated balance sheets. Our workers' compensation liability is recorded at present value. The difference between the discounted and undiscounted liability was not significant as of December 31, 2019 or December 31, 2018.

Our self-insurance liabilities are estimated, in part, by considering historical claims experience, demographic factors and other actuarial assumptions. The estimated accruals for these liabilities could be significantly affected if future events and claims differ from these assumptions and historical trends.

Litigation – Recorded liabilities for legal matters, as well as related charges recorded in each of the past 3 years, were not material to our financial position, results of operations or liquidity during the periods presented, and we do not believe that any of the currently identified claims or litigation will materially affect our financial position, results of operations or liquidity upon resolution. However, litigation is subject to inherent uncertainties, and unfavorable rulings could occur. If an unfavorable ruling were to occur, it may cause a material adverse impact on our financial position, results of operations or liquidity for the period in which the ruling occurs or in future periods.

NOTE 18: SHAREHOLDERS' EQUITY

In October 2018, our board of directors authorized the repurchase of up to \$500,000 of our common stock. This authorization has no expiration date. During 2019, we repurchased 2.6 million shares for \$118,547 under this authorization and \$301,452 remained available for repurchase as of December 31, 2019. Under the current and previous authorizations, we repurchased 3.6 million shares for \$200,000 during 2018 and 924 thousand shares for \$65,000 during 2017.

NOTE 19: BUSINESS SEGMENT INFORMATION

As of December 31, 2019, we operated 3 reportable business segments: Small Business Services, Financial Services and Direct Checks. Our business segments were generally organized by customer type and reflected the way we managed the company through that date.

Small Business Services primarily serves small businesses and promotes and sells its products and services via internet advertising, direct response mail, partner referrals, networks of Safeguard distributors and independent dealers, a direct sales force and an outbound telemarketing group. Financial Services primarily serves financial institutions, including banks, credit unions and financial services companies, and promotes and sells its products and services primarily through a direct sales force. Direct Checks is a leading direct-to-consumer check supplier, selling its products and services directly to consumers via direct marketing, utilizing search engine marketing and optimization strategies and print advertising. All 3 segments operate primarily in the U.S. Small Business Services also has operations in Canada, Australia and portions of Europe, and Financial Services has operations in Canada. No single customer accounted for more than 10% of consolidated revenue during the past 3 years.

During the second quarter of 2019, we announced that as part of our "One Deluxe" strategy, we would realign the company into 4 primary focus areas: Payments, Cloud Solutions, Promotional Solutions and Checks. This realignment was effective on January 1, 2020 and as a result, beginning in 2020, these 4 focus areas become our reportable business segments. We will report financial results for the 4 segments beginning in the first quarter of 2020, and we will retrospectively adjust prior periods to reflect the new reportable segment structure.

Our product and service offerings are comprised of the following:

Marketing solutions and other services (MOS) – We offer products and services designed to meet our customers' sales and marketing needs, as well as various other service offerings. Our MOS offerings generally consist of the following:

- Small business marketing solutions – Our marketing products utilize digital printing and web-to-print solutions to provide printed marketing materials and promotional solutions, such as postcards, brochures, retail packaging supplies, apparel, greeting cards and business cards.
- Treasury management solutions – These solutions include remittance and lockbox processing, remote deposit capture, receivables management, payment processing and paperless treasury management, as well as software, hardware and digital imaging solutions.
- Web services – These service offerings include web hosting and domain name services, logo and web design, payroll services, email marketing, search engine marketing and optimization and business incorporation and organization services.
- Data-driven marketing solutions – These offerings include outsourced marketing campaign targeting and execution and marketing analytics solutions that help our customers grow revenue through strategic targeting, lead optimization, retention and cross-selling services.
- Fraud, security, risk management and operational services – These service offerings include fraud protection and security services, electronic checks and deposits ("ePayments") and digital engagement solutions, including loyalty and rewards programs and financial management tools.

Checks – We are one of the largest providers of personal and business checks in the U.S.

Forms, accessories and other products – We provide printed business forms, including deposit tickets, billing forms, work orders, job proposals, purchase orders, invoices and personnel forms, as well as computer forms compatible with accounting software packages commonly used by small businesses. We also offer other customized products, including envelopes, office supplies, ink stamps, labels, deposit tickets, check registers and checkbook covers.

DELUXE CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(dollars in thousands, except per share amounts)

The following tables present revenue disaggregated by our product and service offerings:

	Year Ended December 31, 2019			
<i>(in thousands)</i>	Small Business Services	Financial Services	Direct Checks	Consolidated
Marketing solutions and other services:				
Small business marketing solutions	\$ 281,552	\$ —	\$ —	\$ 281,552
Treasury management solutions	—	193,527	—	193,527
Web services	166,025	—	—	166,025
Data-driven marketing solutions	—	157,706	—	157,706
Fraud, security, risk management and operational services	24,572	49,562	13,209	87,343
Total MOS	472,149	400,795	13,209	886,153
Checks	462,950	219,695	100,550	783,195
Forms, accessories and other products	320,680	13,008	5,679	339,367
Total revenue	<u>\$ 1,255,779</u>	<u>\$ 633,498</u>	<u>\$ 119,438</u>	<u>\$ 2,008,715</u>

	Year Ended December 31, 2018			
<i>(in thousands)</i>	Small Business Services	Financial Services	Direct Checks	Consolidated
Marketing solutions and other services:				
Small business marketing solutions	\$ 292,245	\$ —	\$ —	\$ 292,245
Treasury management solutions	—	148,011	—	148,011
Web services	161,646	—	—	161,646
Data-driven marketing solutions	—	147,893	—	147,893
Fraud, security, risk management and operational services	25,460	50,499	14,146	90,105
Total MOS	479,351	346,403	14,146	839,900
Checks	476,751	226,554	107,084	810,389
Forms, accessories and other products	327,518	14,010	6,208	347,736
Total revenue	<u>\$ 1,283,620</u>	<u>\$ 586,967</u>	<u>\$ 127,438</u>	<u>\$ 1,998,025</u>

	Year Ended December 31, 2017			
<i>(in thousands)</i>	Small Business Services	Financial Services	Direct Checks	Consolidated
Marketing solutions and other services:				
Small business marketing solutions	\$ 262,192	\$ —	\$ —	\$ 262,192
Treasury management solutions	—	109,240	—	109,240
Web services	131,644	—	—	131,644
Data-driven marketing solutions	—	150,572	—	150,572
Fraud, security, risk management and operational services	25,491	61,185	15,354	102,030
Total MOS	419,327	320,997	15,354	755,678
Checks	482,928	249,716	118,392	851,036
Forms, accessories and other products	337,484	14,562	6,796	358,842
Total revenue	<u>\$ 1,239,739</u>	<u>\$ 585,275</u>	<u>\$ 140,542</u>	<u>\$ 1,965,556</u>

The following table presents revenue disaggregated by geography, based on where items are shipped or services are performed:

<i>(in thousands)</i>	Small Business Services	Financial Services	Direct Checks	Total
Year Ended December 31, 2019				
U.S.	\$ 1,157,195	\$ 611,403	\$ 119,438	\$ 1,888,036
Foreign, primarily Canada and Australia	98,584	22,095	—	120,679
Total revenue	<u>\$ 1,255,779</u>	<u>\$ 633,498</u>	<u>\$ 119,438</u>	<u>\$ 2,008,715</u>
Year Ended December 31, 2018				
U.S.	\$ 1,180,019	\$ 563,918	\$ 127,438	\$ 1,871,375
Foreign, primarily Canada and Australia	103,601	23,049	—	126,650
Total revenue	<u>\$ 1,283,620</u>	<u>\$ 586,967</u>	<u>\$ 127,438</u>	<u>\$ 1,998,025</u>
Year Ended December 31, 2017				
U.S.	\$ 1,150,055	\$ 568,801	\$ 140,542	\$ 1,859,398
Foreign, primarily Canada and Australia	89,684	16,474	—	106,158
Total revenue	<u>\$ 1,239,739</u>	<u>\$ 585,275</u>	<u>\$ 140,542</u>	<u>\$ 1,965,556</u>

Substantially all of our long-lived assets reside in the U.S. Long-lived assets of our foreign subsidiaries are located primarily in Canada and Australia and are not significant to our consolidated financial position.

The accounting policies of the segments are the same as those described in Note 1. We allocate corporate costs for our shared services functions to our business segments, including costs of our executive management, human resources, supply chain, real estate, finance, information technology and legal functions. Where costs incurred are directly attributable to a business segment, those costs are charged directly to that segment. Those costs not directly attributable to a business segment, primarily certain human resources costs, are allocated to the segments based on the number of employees in each segment. Corporate assets are not allocated to the segments and consisted primarily of long-term investments and assets related to our corporate shared services functions of manufacturing, information technology and real estate, including property, plant and equipment; internal-use software; operating lease assets; and inventories and supplies. Depreciation and amortization expense related to corporate assets, which was allocated to the segments, was \$36,239 in 2019, \$33,812 in 2018 and \$33,302 in 2017.

We are an integrated enterprise, characterized by substantial intersegment cooperation, cost allocations and the sharing of assets. Therefore, we do not represent that these segments, if operated independently, would report the operating (loss) income and other financial information shown.

DELUXE CORPORATION
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS
(dollars in thousands, except per share amounts)

The following is our segment information as of and for the years ended December 31:

		Reportable Business Segments				Consolidated
		Small Business Services	Financial Services	Direct Checks	Corporate	
<i>(in thousands)</i>						
Total revenue from external customers:	2019	\$ 1,255,779	\$ 633,498	\$ 119,438	\$ —	\$ 2,008,715
	2018	1,283,620	586,967	127,438	—	1,998,025
	2017	1,239,739	585,275	140,542	—	1,965,556
Operating (loss) income:	2019	(124,235)	(67,524)	33,618	—	(158,141)
	2018	119,808	69,939	41,474	—	231,221
	2017	181,528	101,047	46,601	—	329,176
Depreciation and amortization expense:	2019	62,138	60,622	3,276	—	126,036
	2018	66,031	61,843	3,226	—	131,100
	2017	56,834	62,592	3,226	—	122,652
Asset impairment charges:	2019	273,583	117,397	—	—	390,980
	2018	99,437	1,882	—	—	101,319
	2017	54,880	—	—	—	54,880
Total assets:	2019	841,858	583,555	154,687	363,211	1,943,311
	2018	1,094,262	751,242	157,802	301,790	2,305,096
	2017	1,081,098	679,547	158,827	289,355	2,208,827
Capital asset purchases:	2019	—	—	—	66,595	66,595
	2018	—	—	—	62,238	62,238
	2017	—	—	—	47,450	47,450

DELUXE CORPORATION
SUMMARIZED QUARTERLY FINANCIAL DATA (Unaudited)

	2019 Quarter Ended			
	March 31	June 30	September 30	December 31
<i>(in thousands, except per share amounts)</i>				
Total revenue	\$ 499,065	\$ 493,986	\$ 493,593	\$ 522,071
Gross profit	299,442	291,458	289,870	315,010
Net income (loss)	41,190	32,582	(318,493)	44,824
Earnings (loss) per share:				
Basic	0.93	0.75	(7.49)	1.06
Diluted	0.93	0.75	(7.49)	1.06
Cash dividends per share	0.30	0.30	0.30	0.30

	2018 Quarter Ended			
	March 31	June 30	September 30	December 31
<i>(in thousands, except per share amounts)</i>				
Total revenue	\$ 491,914	\$ 488,244	\$ 493,190	\$ 524,677
Gross profit	303,156	298,043	295,556	309,522
Net income (loss)	63,336	60,207	(31,083)	57,170
Earnings (loss) per share:				
Basic	1.32	1.26	(0.67)	1.25
Diluted	1.31	1.25	(0.67)	1.25
Cash dividends per share	0.30	0.30	0.30	0.30

Significant items affecting the comparability of our quarterly results were as follows:

	2019 Quarter Ended			
	March 31	June 30	September 30	December 31
<i>(in thousands)</i>				
Asset impairment charges	\$ —	\$ —	\$ 390,980	\$ —
Restructuring and integration expense	6,283	17,497	27,674	23,356
Certain legal-related expense	412	6,005	—	3
CEO transition costs	5,488	1,906	1,145	851
Discrete income tax expense (benefit) ⁽¹⁾	926	1,194	62,854	(298)

	2018 Quarter Ended			
	March 31	June 30	September 30	December 31
<i>(in thousands)</i>				
Asset impairment charges	\$ 2,149	\$ —	\$ 99,170	\$ —
Restructuring and integration expense	2,322	6,371	5,104	7,406
Gain on sales of businesses and customer lists	7,228	3,862	1,765	2,786
Certain legal-related expense	297	631	1,805	7,769
CEO transition costs	—	1,530	2,622	3,058
Impact of the Tax Cuts and Jobs Act	(310)	441	(1,249)	(582)
Other discrete income tax (benefit) expense ⁽¹⁾	(579)	(1,167)	15,634	(1,987)

⁽¹⁾ Relates primarily to the tax effects of share-based compensation and the non-deductible portion of goodwill impairment charges in the third quarter of each year.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures – As of the end of the period covered by this report, December 31, 2019 (the "Evaluation Date"), we carried out an evaluation, under the supervision and with the participation of management, including the Chief Executive Officer and the Chief Financial Officer, of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")). Based upon that evaluation, the Chief Executive Officer and the Chief Financial Officer concluded that, as of the Evaluation Date, our disclosure controls and procedures were effective to ensure that information required to be disclosed in the reports that we file or submit under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in applicable rules and forms, and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding required disclosure.

Internal Control Over Financial Reporting – There were no changes in our internal control over financial reporting identified in connection with our evaluation during the quarter ended December 31, 2019 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 – Our management is responsible for establishing and maintaining adequate internal control over financial reporting. 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 in the U.S.

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.

Our management assessed the effectiveness of our internal control over financial reporting as of December 31, 2019. In making this assessment, we used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) in *Internal Control - Integrated Framework* (2013). Based on this assessment, we have concluded that, as of December 31, 2019, our internal control over financial reporting was effective based on those criteria. The attestation report on our internal control over financial reporting issued by PricewaterhouseCoopers LLP appears in Item 8 of this report.

ITEM 9B. OTHER INFORMATION

None.

PART III

Except where otherwise noted, the information required by Items 10 through 14 is incorporated by reference from our definitive proxy statement, to be filed with the Securities and Exchange Commission within 120 days of our fiscal year-end, with the exception of the executive officers section of Item 10, which is included in Part I, Item 1 of this report.

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

See Part I, Item 1 of this report "Information About Our Executive Officers." The sections of the proxy statement entitled "Item 1: Election of Directors," "Board Structure and Governance-Audit Committee Financial Expertise; Complaint-Handling Procedures," "Board Structure and Governance-Committee Membership and Responsibilities-Audit Committee," "Stock Ownership and Reporting-Delinquent Section 16(a) Reports" and "Board Structure and Governance-Code of Business Ethics" are incorporated by reference into this report.

The full text of our Code of Ethics and Business Conduct is posted on our investor relations website, Deluxe.com/investor, under the "Investor Relations-Corporate Governance" caption. We intend to satisfy the disclosure requirement under Item 5.05

of Form 8-K regarding an amendment to, or waiver from, a provision of the Code of Ethics and Business Conduct that applies to our principal executive officer, principal financial officer, principal accounting officer or controller or persons performing similar functions by posting such information on our website at the address and location specified above.

ITEM 11. EXECUTIVE COMPENSATION

The sections of the proxy statement entitled "Executive Compensation-Compensation Committee Report," "Executive Compensation," and "Board Structure and Governance-Non-Employee Director Compensation" are incorporated by reference into this report.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The section of the proxy statement entitled "Stock Ownership and Reporting-Security Ownership of Certain Beneficial Owners and Management" is incorporated by reference into this report.

The following table provides information concerning all of our equity compensation plans as of December 31, 2019:

Equity Compensation Plan Information

Plan category	Number of securities to be issued upon exercise of outstanding options, warrants and rights	Weighted-average exercise price of outstanding options, warrants and rights	Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in the first column)
Equity compensation plans approved by shareholders	2,263,602 ⁽¹⁾	\$ 53.92 ⁽¹⁾	7,498,216 ⁽²⁾
Equity compensation plans not approved by shareholders	—	—	—
Total	2,263,602	\$ 53.92	7,498,216

⁽¹⁾ Includes awards granted under our 2017 Long-Term Incentive Plan and our previous stock incentive plans. The number of securities to be issued upon exercise of outstanding options, warrants and rights includes outstanding stock options of 1,347,152, restricted stock unit awards of 663,956 and 252,494 shares subject to outstanding performance share awards. The number of performance shares reflects the target amount for awards outstanding as of December 31, 2019. The actual number of shares issued under our performance share awards will range between 0% and 200% of the target amount based on our performance relative to the applicable performance goals as determined by our Compensation Committee following the end of the performance period. The performance share and restricted stock unit awards are not included in the weighted-average exercise price of outstanding options, warrants and rights because they require no consideration upon vesting.

⁽²⁾ Includes 3,410,935 shares reserved for issuance under our Amended and Restated 2000 Employee Stock Purchase Plan and 4,078,281 shares available for issuance under our 2017 Long-Term Incentive Plan. Under the 2017 Long-Term Incentive Plan, full value awards such as restricted stock, restricted stock units and share-based performance awards reduce the number of shares available for issuance by a factor of 2.23, or if such an award were forfeited or terminated without delivery of the shares, the number of shares that again become eligible for issuance would be multiplied by a factor of 2.23.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The sections of the proxy entitled "Board Structure and Governance-Board Oversight and Director Independence" and "Board Structure and Governance-Policies and Procedures with Respect to Related Person Transactions" are incorporated by reference into this report.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The sections of the proxy statement entitled "Item 4: Ratification of the Appointment of Independent Registered Public Accounting Firm-Fees Paid to Independent Registered Public Accounting Firm" and "Item 4: Ratification of the Appointment of

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) [Financial Statements and Schedules](#)

The financial statements are set forth under Item 8 of the Annual Report on Form 10-K. Financial statement schedules have been omitted since they are either not required or are not applicable, or the required information is shown in the consolidated financial statements or notes.

(b) [Exhibit Listing](#)

The following exhibits are filed as part of or are incorporated into this report by reference:

Exhibit Number	Description
3.1	Amended and Restated Articles of Incorporation (incorporated by reference to Exhibit 3.1 to the Quarterly Report on Form 10-Q for the quarter ended September 30, 2010)
3.2	Bylaws, as amended on August 21, 2019 (incorporated by reference to Exhibit 3.1 to the Current Report on Form 8-K filed with the Commission on August 27, 2019)
4.1	Indenture, dated as of April 30, 2003, by and between us and Wells Fargo Bank Minnesota, N.A., as trustee (incorporated by reference to Exhibit 4.8 to the Registration Statement on Form S-3 (Registration No. 333-104858) filed with the Commission on April 30, 2003)
4.2	Description of Deluxe Corporation Common Stock Registered Under Section 12 of the Exchange Act of 1934
10.1	Deluxe Corporation 2017 Long-Term Incentive Plan (incorporated by reference to Appendix B of the definitive proxy statement filed with the Commission on March 17, 2017)*
10.2	Amended and Restated 2000 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.3 to the Annual Report on Form 10-K for the year ended December 31, 2018)*
10.3	Deluxe Corporation Deferred Compensation Plan (2011 Restatement) (incorporated by reference to Exhibit 10.7 to the Annual Report on Form 10-K for the year ended December 31, 2010)*
10.4	Deluxe Corporation Deferred Compensation Plan Trust (incorporated by reference to Exhibit 4.3 to the Form S-8 filed with the Commission on January 7, 2002)*
10.5	Deluxe Corporation Executive Deferred Compensation Plan for Employee Retention and Other Eligible Arrangements (incorporated by reference to Exhibit 10.24 to the Quarterly Report on Form 10-Q for the quarter ended June 30, 2000)*
10.6	Deluxe Corporation Severance Plan for Certain Executive Level Employees, effective July 30, 2019 (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q for the quarter ended September 30, 2019)*
10.7	Separation and Release Agreement between us and John Filby (incorporated by reference to Exhibit 10.16 to the Annual Report on Form 10-K for the year ended December 31, 2018)*

Exhibit Number	Description
10.8	<u>Separation and Release Agreement between us and Malcolm McRoberts (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q for the quarter ended June 30, 2019)*</u>
10.9	<u>Employment Agreement, dated October 14, 2018, between us and Barry C. McCarthy and related forms of Restricted Stock Unit Award Agreement and Non-Qualified Stock Option Agreement (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Commission on November 6, 2018)*</u>
10.10	<u>Transition Agreement, dated April 25, 2018, between us and Lee J. Schram (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Commission on April 26, 2018)*</u>
10.11	<u>Form of Agreement for Awards Payable in Restricted Stock Units (version 12/17) (incorporated by reference to Exhibit 10.14 to the Annual Report on Form 10-K for year ended December 31, 2017)*</u>
10.12	<u>Form of Restricted Stock Unit Award Agreement (Bonus Deferral) (version 1/19) (incorporated by reference to Exhibit 10.19 to the Annual Report on Form 10-K for the year ended December 31, 2018)*</u>
10.13	<u>Form of CEO Restricted Stock Unit Award Agreement (version 4/19) (incorporated by reference to Exhibit 10.3 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2019)*</u>
10.14	<u>Form of U.S. Employee Restricted Stock Unit Award Agreement (version 4/19) (incorporated by reference to Exhibit 10.4 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2019)*</u>
10.15	<u>Form of U.S. Employee New Day Restricted Stock Unit Award Agreement (version 4/19) (incorporated by reference to Exhibit 10.5 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2019)*</u>
10.16	<u>Form of Employee Restricted Stock Award Agreement (version 12/17) (incorporated by reference to Exhibit 10.16 to the Annual Report on Form 10-K for the year ended December 31, 2017)*</u>
10.17	<u>Form of Non-Qualified Stock Option Agreement (version 12/17) (incorporated by reference to Exhibit 10.19 to the Annual Report on Form 10-K for the year ended December 31, 2017)*</u>
10.18	<u>Form of CEO Non-Qualified Stock Option Agreement (version 4/19) (incorporated by reference to Exhibit 10.6 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2019)*</u>
10.19	<u>Form of U.S. Employee Non-Qualified Stock Option Agreement (version 4/19) (incorporated by reference to Exhibit 10.7 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2019)*</u>
10.20	<u>Form of Performance Share (Total Shareholder Return) Award Agreement (version 2/18) (incorporated by reference to Exhibit 10.21 to the Annual Report on Form 10-K for the year ended December 31, 2017)*</u>
10.21	<u>Form of Performance Share Award Agreement (Marketing Solutions and Other Services Organic Growth) (version 2/18) (incorporated by reference to Exhibit 10.22 to the Annual Report on Form 10-K for the year ended December 31, 2017)*</u>
10.22	<u>Form of CEO Performance Share Unit Award Agreement (version 4/19) (incorporated by reference to Exhibit 10.8 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2019)*</u>

Exhibit Number	Description
10.23	Form of U.S. Employee Performance Share Unit Award Agreement (version 4/19) (incorporated by reference to Exhibit 10.9 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2019)*
10.24	Description of modification to the Deluxe Corporation Non-Employee Director Retirement and Deferred Compensation Plan (incorporated by reference to Exhibit 10.23 to the Annual Report on Form 10-K for the year ended December 31, 2017)*
10.25	First Amendment to Deluxe Corporation Non-employee Director Stock and Deferral Plan (incorporated by reference to Exhibit 10.3 to the Annual Report on Form 10-K for the year ended December 31, 2008)*
10.26	Form of Non-Employee Director Restricted Stock Award Agreement (version 4/07) (incorporated by reference to Exhibit 10.1 to the Quarterly Report on Form 10-Q for the quarter ended March 31, 2007)*
10.27	Form of Non-Employee Director Restricted Stock Unit Award Agreement (version 2/18) (incorporated by reference to Exhibit 10.26 to the Annual Report on Form 10-K for the year ended December 31, 2017)*
10.28	Credit agreement, dated as of March 21, 2018, by and among us, the financial institutions signatory thereto and JPMorgan Chase Bank, N.A., in its capacity as administrative agent for itself and the other lenders (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Commission on March 21, 2018)
10.29	Increasing Lender Supplement, dated January 22, 2019, to the credit agreement dated as of March 21, 2018, among us, the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent (incorporated by reference to Exhibit 10.1 to the Current Report on Form 8-K filed with the Commission on January 24, 2019)
21.1	Subsidiaries of the Registrant
23.1	Consent of Independent Registered Public Accounting Firm
31.1	CEO Certification of Periodic Report pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2	CFO Certification of Periodic Report pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1	CEO and CFO Certification of Periodic Report pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
101.SCH	XBRL Taxonomy Extension Schema Document
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document

Exhibit Number	Description
101.LAB	XBRL Taxonomy Extension Label Linkbase Document
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
104	Cover page interactive data file (formatted as Inline XBRL and contained in Exhibit 101)

* Denotes compensatory plan or management contract

Note to recipients of Form 10-K: Copies of exhibits will be furnished upon written request and payment of reasonable expenses in furnishing such copies.

ITEM 16. FORM 10-K SUMMARY

We have elected not to include an optional Form 10-K Summary.

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.

Date: February 21, 2020

DELUXE CORPORATION

/s/ Barry C. McCarthy

Barry C. McCarthy, President and Chief Executive 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 indicated on February 21, 2020.

<u>Signature</u>	<u>Title</u>
<u>/s/ Barry C. McCarthy</u> Barry C. McCarthy	President and Chief Executive Officer (Principal Executive Officer)
<u>/s/ Keith A. Bush</u> Keith A. Bush	Senior Vice President, Chief Financial Officer (Principal Financial Officer)
<u>/s/ Ronald Van Houwelingen</u> Ronald Van Houwelingen	Vice President, Corporate Controller (Principal Accounting Officer)
<u>/s/ Ronald C. Baldwin</u> Ronald C. Baldwin	Director
<u>/s/ William C. Cobb</u> William C. Cobb	Director
<u>/s/ Cheryl Mayberry McKissack</u> Cheryl Mayberry McKissack	Director
<u>/s/ Don J. McGrath</u> Don J. McGrath	Director
<u>/s/ Neil J. Metviner</u> Neil J. Metviner	Director
<u>/s/ Stephen P. Nachtsheim</u> Stephen P. Nachtsheim	Director
<u>/s/ Thomas J. Reddin</u> Thomas J. Reddin	Director
<u>/s/ Martyn R. Redgrave</u> Martyn R. Redgrave	Director
<u>/s/ John L. Stauch</u> John L. Stauch	Director
<u>/s/ Victoria A. Treyger</u> Victoria A. Treyger	Director

Description of Deluxe Corporation Common Stock Registered Under Section 12 of the Exchange Act of 1934

The following description of our common stock, \$1.00 par value per share ("Common Stock"), is a summary and does not purport to be complete. It is subject to and qualified in its entirety by reference to our Amended and Restated Articles of Incorporation dated September 2, 2010 (the "Articles of Incorporation") and our Bylaws, as amended on August 21, 2019 (the "Bylaws"), each of which is incorporated by reference as an exhibit to the Annual Report on Form 10-K of which this Exhibit 4.2 is a part. We encourage you to read our Articles of Incorporation, our Bylaws and the applicable provisions of the Minnesota Business Corporation Act (the "MBCA") for additional information.

Authorized Capital Shares

Our authorized capital shares consist of 500,000,000 shares of Common Stock.

Voting Rights

Holders of shares of our Common Stock are entitled to one vote per share on all matters voted on by the shareholders, including the election of directors. Our Common Stock does not have cumulative voting rights. Except as otherwise required by the MBCA, the Articles of Incorporation or the Bylaws, all questions properly before a meeting of shareholders will be decided by a vote of the number of the greater of (i) a majority of the shares entitled to vote on the question and represented at the meeting at the time of the vote, or (ii) a majority of the minimum number of shares entitled to vote that would constitute a quorum for the transaction of business at the meeting.

Dividend Rights

The holders of Common Stock are entitled to receive dividends, if any, as may be declared from time to time by the Board of Directors at its discretion, out of funds legally available for the payment of dividends. We may pay dividends in cash, stock or other property. We and our subsidiaries are and may become party to agreements pursuant to which we borrow money, and certain covenants in these agreements may limit our ability to pay dividends or other distributions with respect to the Common Stock or to repurchase the Common Stock.

Liquidation Rights

If we voluntarily or involuntarily liquidate, dissolve or wind up our business, holders of Common Stock will share ratably, according to the number of shares held by them, in all assets legally available for distribution to our shareholders.

Warrants and Rights

The Board of Directors may grant options to purchase or subscribe for shares of any class or classes, free of any preemptive right of shareholders.

Other Rights and Preferences

Our Common Stock has no sinking fund or redemption provisions or preemptive, conversion or exchange rights. Holders of our Common Stock may act by unanimous written consent, and as provided in the MBCA, holders of 10% of the voting power of all shares entitled to vote (25% if the purpose of the meeting is to facilitate a business combination) may call a special meeting of shareholders.

Listing and Transfer Agent

Our Common Stock is traded on the New York Stock Exchange under the trading symbol "DLX." The transfer agent and registrar for our Common Stock is Equiniti Shareowner Services.

Fully Paid Shares

Our outstanding shares of Common Stock are, and any newly issued shares of Common Stock will be, fully paid and non-assessable.

Anti-takeover Provisions Contained in Our Articles of Incorporation and Bylaws

Certain provisions of our Articles of Incorporation and Bylaws may make it less likely that our management would be changed or someone would acquire control of our company without the board's consent. These provisions may delay, defer or prevent a change in control or takeover attempts that shareholders may believe are in their best interests, including tender offers or attempts that might allow shareholders to receive premiums over the market price of their Common Stock.

- **Director Nomination and Election Procedures.** In order to nominate candidates for the Board of Directors, a shareholder must follow the advance notice procedures described in our Bylaws. In general, a shareholder must give written notice of such nomination to our secretary at least 90 calendar days prior to the first anniversary of the preceding year's annual meeting of shareholders, together with required information regarding the shareholder
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proponent and the nominee and the written consent of the nominee to serve as director. Directors are elected by a plurality of the voting power of the shares present and entitled to vote on the election of directors at a meeting at which a quorum is present, meaning that the candidates receiving the greatest number of votes are elected, regardless of whether or not they receive a majority of the votes cast. As a result, "vote no" campaigns to unseat incumbent directors may be ineffective in uncontested elections.

- **Shareholder Proposal Procedures.** Shareholders can propose that business other than nominations to the Board of Directors be considered at an annual meeting of shareholders only if a shareholder follows the advance notice procedures described in our Bylaws. In general, a shareholder must submit a written notice of the proposal together with required information regarding the shareholder and the shareholder's interest in the proposal to the Board of Directors or our secretary at least 90 calendar days prior to the first anniversary of the preceding year's annual meeting of shareholders. Shareholders seeking to have a proposal, other than director nominations, considered for inclusion in our annual proxy statement must comply with the requirements of Rule 14a-8 of the proxy rules under the federal securities laws.
- **Related Person Transactions.** Our Articles of Incorporation contain "fair price" provisions which require that holders of not less than 70% of the outstanding shares of our voting stock shall approve (i) business combinations with a 5% shareholder or its affiliates or associates, including mergers, consolidations, exchanges of shares, or sales of all or substantially all of the assets of our company, and (ii) business combinations involving a subsidiary that require the approval of the shareholders of the subsidiary, unless in the case of either (i) or (ii), specified price criteria and procedural requirements are met or unless the transaction is approved by the majority of our continuing directors. Our Articles of Incorporation also contain "anti-greenmail" provisions which preclude us from making certain purchases of Common Stock from a 5% shareholder unless the purchases are approved by not less than 50% of the outstanding shares of voting stock held by the disinterested shareholders. These "fair price" and "anti-greenmail" provisions of our Articles may not be amended without the affirmative vote of the holders of at least 70% of the outstanding shares of our voting stock.

DELUXE CORPORATION SUBSIDIARIES

Anchor Systems Pty Ltd (Australia)
ChecksByDeluxe.com, LLC (Minnesota)
Crucial Paradigm Pty Ltd (Australia)
Datamyx LLC (Delaware)
Direct Checks Unlimited, LLC (Colorado)
Direct Checks Unlimited Sales, Inc. (Colorado)
Deluxe Business Operations, Inc. (Delaware)
Deluxe Enterprise Operations, LLC (Minnesota)
Deluxe Financial Services, LLC (Minnesota)
Deluxe Manufacturing Operations, LLC (Minnesota)
Deluxe Small Business Sales, Inc. (Minnesota)
Deluxe Strategic Sourcing, Inc. (Texas)
Digital Pacific Assets Pty Ltd (Australia)
Digital Pacific Group Pty Ltd (Australia)
Digital Pacific Pty Ltd (Australia)
Digital Pacific Services Pty Ltd (Australia)
First Manhattan Consulting Group, LLC (Delaware)
Hostopia Australia Holding Co Pty Ltd (Australia)
Hostopia Australia Pty Ltd (Australia)
Hostopia Australia Web Pty Ltd (Australia)
Hostopia Bulgaria EOOD (Bulgaria)
Hostopia Canada, Corp. (Canada)
Hostopia Ireland Limited (Ireland)
Internet Names for Business Inc. (Canada)
LogoMix Inc. (Delaware)
MyCorporation Business Services, Inc. (Minnesota)
NEBS Business Products Limited (Canada)
Payce, Inc. (Maryland)
REMITCO LLC (Delaware)
Research Development and Manufacturing Corporation (Canada)
Safeguard Acquisitions, Inc. (Texas)
Safeguard Business Systems, Inc. (Delaware)
Safeguard Business Systems Limited (Canada)
Safeguard Franchise Sales, Inc. (Texas)
Safeguard Franchise Systems, Inc. (Texas)
Safeguard Holdings, Inc. (Texas)
Wausau Delaware, LLC (Delaware)
Wausau Financial Systems, Inc. (Wisconsin)
Wausau RDM Holding Corp. (Canada)

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-8 (No. 33-53585, 333-03265, 333-95739, 333-52452, 333-52454, 333-89532, 333-150674, 333-181435 and 333-223180) of Deluxe Corporation of our report dated February 21, 2020 relating to the financial statements and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP
Minneapolis, Minnesota
February 21, 2020

CEO CERTIFICATION OF PERIODIC REPORT UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Barry C. McCarthy, President and Chief Executive Officer of Deluxe Corporation, certify that:

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

Date: February 21, 2020

/s/ Barry C. McCarthy

Barry C. McCarthy
President and Chief Executive Officer

CFO CERTIFICATION OF PERIODIC REPORT UNDER SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Keith A. Bush, Chief Financial Officer of Deluxe Corporation, certify that:

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

Date: February 21, 2020

/s/ Keith A. Bush

Keith A. Bush

Senior Vice President, Chief Financial Officer

CEO AND CFO CERTIFICATION OF PERIODIC REPORT

We, Barry C. McCarthy, President and Chief Executive Officer of Deluxe Corporation (the “Company”), and Keith A. Bush, Chief Financial Officer of the Company, certify, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350, that:

- (1) the Annual Report on Form 10-K of the Company for the year ended December 31, 2019 (the “Report”) fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 (15 U.S.C. 78m or 78o(d)); and
- (2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: February 21, 2020

/s/ Barry C. McCarthy

Barry C. McCarthy
President and Chief Executive Officer

/s/ Keith A. Bush

Keith A. Bush
Senior Vice President, Chief Financial Officer