Item 5. Operating and Financial Review and Prospects

CELESTICA INC.
MANAGEMENT'S DISCUSSION AND ANALYSIS
OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS
FOR THE YEAR ENDED DECEMBER 31, 2017

The following Management's Discussion and Analysis of Financial Condition and Results of Operations (MD&A) should be read in conjunction with our 2017 audited consolidated financial statements, which we prepared in accordance with International Financial Reporting Standards (IFRS) as issued by the International Accounting Standards Board (IASB). Unless otherwise noted, all dollar amounts are expressed in U.S. dollars. The information in this discussion is provided as of February 14, 2018 unless we indicate otherwise.

Certain statements contained in this MD&A constitute forward-looking statements within the meaning of Section 27A of the U.S. Securities Act of 1933, as amended, and Section 21E of the U.S. Securities Exchange Act of 1934, as amended (U.S. Exchange Act), and contain forward-looking information within the meaning of Canadian securities laws. Such forward-looking information includes, without limitation, statements related to: our future growth, including in our Advanced Technology Solutions (ATS) businesses; trends in the electronics manufacturing services (EMS) industry; our anticipated financial and/or operational results (including our anticipated non-IFRS operating margin performance during the second half of 2018); our anticipated acquisition of Atrenne Integrated Solutions, Inc. (Atrenne), the expected timing, cost, terms and funding thereof, and the expected impact of such acquisition, if consummated, on our position in the aerospace and defense and industrial markets; our goals with respect to broadening our portfolio of ATS products and services and growing our ATS business (including aerospace and defense); our diversification plans (and potential hindrances thereto); the impact of acquisitions and program wins or losses on our liquidity, financial results and working capital requirements; anticipated expenses, restructuring actions and charges, capital expenditures, and other anticipated working capital requirements, including the anticipated amounts, timing and funding thereof; the anticipated repatriation of undistributed earnings from foreign subsidiaries; the impact of tax and litigation outcomes; our cash flows, financial targets and current priorities; intended investments in our business; changes in our mix of revenue by end market; our ability to diversify and grow our customer base and develop new capabilities; the effect of the pace of technological changes, customer outsourcing and program transfers, and the global economic environment on customer demand; the impact of increased competition, pricing and margin pressures, demand volatility, and materials constraints on our financial results, and the expected continuation of such adverse market conditions in our Enterprise and Communications end markets; raw materials prices; our intention to settle outstanding equity awards with subordinate voting shares; the number of subordinate voting shares we may repurchase under our normal course issuer bid (NCIB); the expected timing of the collection of outstanding solar accounts receivable and the possibility of future write-downs on unrecovered amounts from such solar accounts receivable and other solar assets; the expected timing of the sale of our solar panel manufacturing equipment; the impact of outstanding indebtedness under our credit facility on our liquidity, future operations and financial condition; the timing and terms of the sale of our real property in Toronto and related transactions, including the expected lease of our new corporate headquarters (collectively, the Toronto Real Property Transactions); the costs, timing and execution of relocating our existing Toronto manufacturing operations and the anticipated temporary relocation of our corporate headquarters while space in a new office building is under construction; the potential impact of Britain's intention to leave the European Union (Brexit) and/or policies or legislation proposed or instituted by the current administration in the U.S. on the economy, financial markets, currency exchange rates and our business; the anticipated impact of the U.S. Tax Reform (as defined herein) on our operations and our global tax rate; our expectations with respect to future pioneer incentives for limited portions of our Malaysian business; the impact of new wins, recent program transfers, and acquisitions; the anticipated impact of new accounting standards on our consolidated financial statements and the timing of related transition activities; the impact of longer-term contracts; our expectations with respect to increasing fulfillment services offered to customers; our intentions with respect to our U.K. Supplementary pension plan; and the potential use of cash, securities issuances and/or increased third-party indebtedness to fund our operations or acquisitions, and the potential adverse impacts of such uses on our liquidity, subordinate voting share price, debt leverage, agency ratings, business and/or operations. Such forward-looking statements may, without limitation, be preceded by, followed by, or include words such as "believes", "expects", "anticipates", "estimates", "intends", "plans", "continues", "project", "potential", "possible", "contemplate", "seek", or similar expressions, or may employ such future or conditional verbs as "may", "might", "will", "could", "should" or "would", or may otherwise be indicated as forward-looking statements by grammatical construction, phrasing or context. For those statements, we claim the protection of the safe harbor for forward-looking statements contained in the U.S. Private Securities Litigation Reform Act of 1995 and applicable Canadian securities laws.

Forward-looking statements are provided for the purpose of assisting readers in understanding management's current expectations and plans relating to the future. Readers are cautioned that such information may not be appropriate for other purposes. Forward-looking statements are not guarantees of future performance and are subject to risks that could cause actual results to differ materially from conclusions, forecasts or projections expressed in such forward-looking statements, including, among others, risks related to: our customers' ability to compete and succeed in the marketplace with the services we provide and the products we manufacture; customer and end market concentration and the challenges of diversifying our customer base and replacing revenue from completed or lost programs or customer disengagements; changes in our mix of customers and/or the types of products or services we provide; higher concentration of fulfillment services and/or other lower margin programs impacting gross profit; price, margin pressures, and other competitive factors generally affecting, and the highly competitive nature of, the EMS industry; price and other competitive factors affecting our Communications and Enterprise end markets; responding to changes in demand, rapidly evolving and changing technologies, and changes in our customers' business and outsourcing strategies, including the insourcing of programs; customer, competitor and/or supplier consolidation; integrating any acquisitions or strategic transactions (including "operate-in-place" arrangements); our having sufficient financial resources and working capital to fund currently anticipated financial obligations and to pursue desirable business opportunities, and potential negative impacts on our liquidity, financial condition and/or results of operations resulting from significant uses of cash and/or any future securities issuances or increased third-party indebtedness for acquisitions or to otherwise fund our operations; delays in the delivery and availability of components, services and materials, including from suppliers upon which we are dependent for certain components; our restructuring actions, including achieving the anticipated benefits therefrom, and the potential negative impact of transitions resulting from our restructuring actions on our operations; the incurrence of future impairment charges or other write-downs of assets; managing our operations, growth initiatives, and our working capital performance during uncertain market and economic conditions; disruptions to our operations, or those of our customers, component suppliers and/or logistics partners, including as a result of global or local events outside our control (including as a result of Brexit and/or policies or legislation proposed or instituted by the current U.S. administration, including the impact of the U.S. Tax Reform on our operations, or those of our customers, component suppliers and/or logistics partners); retaining or expanding our business due to execution issues relating to the ramping of new and existing programs or new offerings; the expansion or consolidation of our operations; recruiting or retaining skilled talent; changes to our operating model; changing commodity, material and component costs as well as labor costs and conditions; defects or deficiencies in our products, services or designs; non-performance by counterparties, including our former solar supplier, from whom we have accounts receivable outstanding; our financial exposure to foreign currency volatility, including fluctuations that may result from Brexit and/or policies or legislation proposed or instituted by the current U.S. administration; managing our global operations and supply chain; the failure to obtain (or a delay in obtaining) the necessary regulatory approvals or the failure to satisfy the other closing conditions required for our purchase of Atrenne, a material adverse change at Atrenne, the failure to consummate our purchase of Atrenne in a timely manner or at all, our failure to obtain adequate funding for the acquisition on acceptable terms, the purchase price varying from the expected amount, and if the acquisition is consummated, a failure to achieve the anticipated benefits therefrom, to successfully integrate the acquisition, to further develop our capabilities in the aerospace and defense market or otherwise expand our portfolio of solutions, and/or to achieve the other expected benefits from the acquisition; our dependence on industries affected by rapid technological change; any failure to adequately protect our intellectual property or the intellectual property of others; increasing income and other taxes, tax audits, and challenges of defending our tax positions, and obtaining, renewing or meeting the conditions of tax incentives and credits; the potential that conditions to closing the Toronto Real Property Transactions may not be satisfied on a timely basis or at all; the costs, timing and/or execution of relocating our existing Toronto manufacturing operations and/or corporate headquarters proving to be other than anticipated; computer viruses, malware, hacking attempts or outages that may disrupt our operations; the variability of revenue and operating results; compliance with applicable laws, regulations, government grants and social responsibility initiatives; and current or future litigation, governmental actions, and/or changes in legislation. The foregoing and other material risks and uncertainties are discussed in our public filings at www.sedar.com and www.sec.gov, including in this MD&A, our most recent Annual Report on Form 20-F filed with, and subsequent reports on Form 6-K furnished to, the U.S. Securities and Exchange Commission (SEC), and as applicable, the Canadian Securities Administrators.

Our forward-looking statements are based on various assumptions, many of which involve factors that are beyond our control. Our material assumptions include those related to the following: production schedules from our customers, which generally range from 30 to 90 days and can fluctuate significantly in terms of volume and mix of products or services; the timing and execution of, and investments associated with, ramping new business (including new business associated with acquisitions); the successful pursuit, completion and integration of acquisitions; the success in the marketplace of our customers' products; the pace of change in our traditional end markets and our ability to retain programs and customers; the stability of general economic and market conditions, currency exchange rates, and interest rates; our pricing, the competitive environment and contract terms and conditions; supplier performance, pricing and terms; compliance by third parties with their contractual obligations, the accuracy of their representations and warranties, and the performance of their covenants; the costs and availability of components, materials, *services, plant and capital equipment, labor, energy and transportation; operational and financial matters including the extent, timing and costs of replacing revenue from completed or lost programs, or customer disengagements; technological developments; that the impact of the U.S. Tax Reform on our operations will be as we currently anticipate; our ability to recover accounts receivable outstanding from a former solar supplier; the timing, execution, and effect of restructuring actions; our having sufficient financial resources and working capital to fund currently anticipated financial obligations and to pursue desirable business opportunities; our ability to diversify our customer base and develop new capabilities; the availability of cash resources for repurchases of outstanding subordinate voting shares under our current NCIB; compliance with applicable laws and regulations pertaining to NCIBs; applicable regulatory approvals will be obtained and the other closing conditions to our purchase of Atrenne will be satisfied in a timely manner; that our purchase of Atrenne will be consummated in a timely manner and on anticipated terms; that internal cash flow and our ability to incur further indebtedness under our revolving credit facility will be as expected in order to finance the Atrenne acquisition as anticipated; and that, once acquired, we are able to successfully integrate Atrenne, further develop our capabilities in the aerospace and defense market, expand our portfolio of solutions, and achieve the other expected benefits from the acquisition. While management believes these assumptions to be reasonable under the current circumstances, they may prove to be inaccurate. Forward-looking statements speak only as of the date on which they are made, and we disclaim any intention or obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law.*

All forward-looking statements attributable to us are expressly qualified by these cautionary statements.

Overview

What Celestica does:

We deliver innovative supply chain solutions globally to customers in the following end markets: Advanced Technology Solutions (ATS) (consists of our former Diversified and Consumer end markets, and is comprised of our aerospace and defense, industrial, smart energy, healthcare, semiconductor equipment, and consumer businesses), Communications (consists of our enterprise communications and telecommunications businesses), and Enterprise (consists of our servers and storage businesses). We believe our services and solutions create value for our customers by accelerating their time-to-market, and by providing higher quality, lower cost and reduced cycle times in our customers' supply chains as compared to their insourcing of these activities. We believe this results in lower total cost of ownership, greater flexibility, higher return on invested capital and improved competitive advantage for our customers in their respective markets.

Our global headquarters is located in Toronto, Canada. We operate a network of sites in various geographies with specialized end-to-end supply chain capabilities tailored to meet specific market and customer product lifecycle requirements. In an effort to drive speed, quality and flexibility for our customers, we execute our business in sites and centers of excellence strategically located in North America, Europe and Asia.

We offer a range of services to our customers, including design and development (such as our Joint Design and Manufacturing (JDM) offering, which consists of developing design solutions in collaboration with customers, as well as managing aspects of the supply chain and manufacturing), engineering services, supply chain management, new product introduction, component sourcing, electronics manufacturing, assembly and test, complex mechanical assembly, systems integration, precision machining, order fulfillment, logistics and after-market repair and return services.

The products and services we provide serve a wide variety of applications, including: servers; networking and telecommunications equipment; storage systems; converged systems; optical equipment; aerospace and defense electronics; healthcare products and applications; semiconductor equipment; and a range of industrial and alternative energy products.

To increase the value we deliver to our customers, we continue to make investments in people, value-added service offerings, new capabilities, capacity, technology, IT systems, software and tools. We continuously work to improve our productivity, quality, delivery performance and flexibility in our efforts to be recognized as a leading company in the EMS industry. In connection therewith, we have recently completed our Global Business Services (GBS) initiative, which was focused on integrating, standardizing and optimizing our end-to-end business processes, and our Organizational Design (OD) initiative, which involved redesigning our organizational structure, with the goal of increasing the overall effectiveness of our organization by improving internal alignment, reducing complexity and increasing our speed to outcome. To streamline our processes and reduce costs, we have invested in automation and the connected factory. Our recently announced cost efficiency initiative, and related anticipated restructuring actions, are also intended to further streamline our business, increase operational efficiencies and improve our productivity.

A key focus for us is to grow our ATS end market (which constituted 32% of total revenue in 2017) in order to reduce the revenue concentration of our Communications and Enterprise end markets (which constituted an aggregate of 68% of total revenue in 2017). Our current priorities include (i) growing and diversifying our customer and product portfolios to help achieve longer-term consistency, increasing our revenue and improving operating margins, (ii) increasing the contribution from our ATS end market to our overall profitability, while continuing to invest in capabilities and targeted end markets, (iii) generating strong annual free cash flow and adjusted return on invested capital ("adjusted ROIC") and (iv) continuing to improve our execution by focusing on increased productivity and simplification throughout our organization. We believe that continued investments in these areas support our long-term growth strategy, and will strengthen our competitive position, enhance customer satisfaction, and increase long-term shareholder value. Operating margin, adjusted ROIC and free cash flow are non-IFRS measures without standardized meanings and may not be comparable to similar measures presented by other companies. See "Non-IFRS measures" below for a discussion of the non-IFRS measures included herein, and a reconciliation of our non-IFRS measures to the most directly comparable IFRS measures.

We believe that profitable revenue growth depends significantly on increasing sales and capabilities in our ATS businesses, as well as increasing sales to and expanding the range of services we provide to existing customers in all of our end markets for their current and future product generations. Accordingly, we will continue to focus on investing both organically and through acquisitions to expand our offerings of higher-value added services, including design and development, engineering, and after-market services. Our CCS businesses, together representing 68% of total revenue in 2017 (and consisting of our Enterprise and Communications end markets), generally experience a high degree of volatility in terms of revenue and service mix, as well as recent negative pricing pressures. We were impacted by these adverse market conditions in 2017, and expect these conditions to continue in 2018. To help grow our overall revenue and to offset these market factors, we are pursuing new customers and acquisition opportunities in our ATS businesses to expand our end market penetration, to diversify our end market mix, and to enhance and add new technologies and capabilities to our offerings. In support of this expansion, we have executed two "operate-in-place" outsourcing agreements with existing aerospace and defense customers, pursuant to which we provide manufacturing and after-market repair services for specific product lines at each customer's site. Under such arrangements, we assume the workforce assigned to the relevant operations and purchase the required inventory. In addition, we expanded our capabilities in the aerospace and defense market with our November 2016 acquisition of Karel (defined below), and anticipate further expansion of our aerospace and defense and industrial capabilities should our acquisition of Atrenne Integrated Solutions, Inc. (Atrenne) be consummated (see "Recent developments" below).

Overview of business environment:

The EMS industry is highly competitive, with multiple global EMS providers competing for customers and programs. Although the industry is characterized by a large revenue base and new business opportunities, demand can be volatile from period to period, and aggressive pricing is a common business dynamic, particularly in the Enterprise and Communications end markets. Capacity utilization, customer mix and the types of products and services we provide are important factors affecting our financial performance. The number of sites, the location of qualified personnel, the manufacturing capacity, and the mix of business through that capacity are vital considerations for EMS providers in terms of supporting their customers and generating appropriate returns. Because the EMS industry is working capital intensive, we believe that adjusted ROIC (discussed in "Non-IFRS measures" below), which is primarily based on non-IFRS operating earnings and investments in working capital and equipment, is an important metric for measuring an EMS provider's financial performance.

EMS companies provide a range of services to a variety of customers and end markets. However, demand patterns are volatile, particularly in the Enterprise and Communications end markets, making customer revenue and mix, revenue by end market, and overall profitability difficult to forecast. Product lifecycles in the markets we serve, production lead times required by our customers, rapid shifts in technology, model obsolescence, commoditization of certain products, the emergence of new business models (including Infrastructure as a Service (IaaS), Platform as a Service (PaaS), and Software as a Service (SaaS)), shifting patterns of demand, such as the shift from traditional network infrastructures to highly virtualized and cloud-based environments, the prevalence of solid state or flash memory technology as a replacement for hard disk drives, as well as the proliferation of software-defined technologies enabling the disaggregation of software and hardware, increased competition, oversupply of products, pricing pressures, and the volatility of the economy all contribute to the complexity of managing our operations and fluctuations in our financial results. For example, declines in end-market demand for customer-specific proprietary systems in favor of open systems with standardized technologies has had an adverse impact on our customers, and consequently, our business.

In addition, uncertainty in the global economy and financial markets may impact current and future demand for our customers' products and services, and consequently, the operations of EMS providers, including Celestica. We continue to monitor the dynamics and impacts of the global economic and financial environment and work to manage our priorities, costs and resources to anticipate and prepare for any changes we deem necessary.

External factors that could impact the EMS industry and our business include natural disasters and related disruptions, political instability, terrorism, armed conflict, labor or social unrest, criminal activity, disease or illness that affects local, national or international economies, unusually adverse weather conditions, and other risks present in the jurisdictions in which we, our customers, our suppliers, and/or our logistics partners operate. These types of events could disrupt operations at one or more of our sites or those of our customers, component suppliers and/or our logistics partners. These events could lead to higher costs or supply shortages or may disrupt the delivery of components to us, or our ability to provide finished products or services to our customers, any of which could adversely affect our operating results. We carry insurance to cover damage to our sites and interruptions to our operations, including those that may occur as a result of natural disasters, such as flooding and earthquakes, or other events. Our insurance policies, however, are subject to deductibles, coverage limitations and exclusions, and may not provide adequate coverage should such events occur. Uncertainties resulting from Brexit, policies or legislation proposed or instituted by the current administration in the U.S., and/or increased tensions with North Korea, may adversely affect our business, results of operations and financial condition. Given the lack of comparable precedent, it is unclear what financial, trade and legal implications the withdrawal of the United Kingdom from the European Union will have and how such withdrawal will affect us, our customers and their demand for our services. In addition, the current U.S. administration has created uncertainty with respect to, among other things, existing and proposed trade agreements (including the status of the North American Free Trade Agreement (NAFTA)), free trade generally, and potentially significant increases on tariffs on goods imported into the U.S., particularly from Mexico, Canada and China. We currently ship a significant portion of our worldwide production to customers in the U.S. from other countries. Changes to U.S. laws or policies may impact the pace of outsourcing by U.S. customers in the future, including the possibility of such customers' insourcing programs that were previously outsourced (including to companies like ours). It is unknown at this time to what extent new legislation, or pending or new regulatory proposals will be adopted in the U.S., if any, or the effect that such adoption may have on our business, including the full extent of the impact of recent U.S. tax reform (discussed in "Critical Accounting Policies and Estimates" below). However, changes in U.S. social, political, regulatory and economic conditions or in laws and policies governing foreign trade or taxation, manufacturing, clean energy, the healthcare industry, development and investment in the jurisdictions in which we, and/or our customers or suppliers operate, could materially adversely affect our business, results of operations and financial condition.

We have significant suppliers that are important to our sourcing activities. If a key supplier (or any company within such supplier's supply chain) experiences financial or other difficulties, this may affect its ability to supply us with materials, components or services, which could halt or delay the production of a customer's product, and/or have a material adverse impact on our operations, financial results and customer relationships. During 2017, we experienced materials constraints from certain suppliers, which caused delays in the production of customer products, and resulted in higher than expected levels of inventory. We expect these materials constraints and adverse impacts to continue in the near term.

Our ability to collect our accounts receivable and future sales depends, in part, on the financial strength of our customers. If any of our customers have insufficient liquidity, we could encounter significant delays or defaults in payments owed to us by such customers, or we may extend our payment terms, which could adversely impact our short-term cash flows, financial condition and/or operating results. From time to time, we have extended the payment terms applicable to certain customers, which has adversely impacted our working capital requirements, and increased our financial exposure and credit risk. In addition, customer financial difficulties or changes in the demand for our customers' products may result in order cancellations and higher than expected levels of inventory, which could in turn have a material adverse impact on our operating results and working capital performance. We may not be able to return or re-sell this inventory, or we may be required to hold the inventory for a period of time, any of which may result in our having to record additional reserves for the inventory. We also may be unable to recover all of the amounts owed to us by a customer, including amounts to cover unused inventory or capital investments we incurred to support that customer's business. Furthermore, if a customer bankruptcy occurs, our profitability may be adversely impacted by our failure to collect our accounts receivable in excess of our estimated allowance for uncollectible accounts or amounts insured (which occurred with respect to one of our solar customers during 2017, whose bankruptcy caused us to record accounts receivable provisions, discussed below). Additionally, our future revenues could be reduced by the loss of a customer due to bankruptcy. Our failure to collect accounts receivable and/or the loss of one or more major customers could have an adverse effect on our operating results, financial position and cash flows.

We cannot reliably determine if and to what extent customers or suppliers may have financial and other difficulties, whether we will be required to adjust our prices or the amount we pay for materials and components, or face collection issues with customers, or if customer or supplier bankruptcies will occur. In connection with our exit from the solar panel manufacturing business, we recorded aggregate charges in excess of $30 million to write down the carrying values of our solar panel manufacturing equipment, inventories and accounts receivable during 2016 and 2017. If we are unable to collect the current carrying value of our remaining solar assets ($2.6 million in solar panel manufacturing equipment and $6.7 million in solar accounts receivable as of December 31, 2017), we will incur additional asset write downs in future periods. See “Summary of 2017” below for further details.

Our business is also affected by customers who may shift production between EMS providers (including shifts to our competitors) for a number of reasons, including pricing concessions, more favorable terms and conditions, their preference or need to consolidate their supply chain capacity or the number of supply chain partners, tax benefits, new trade policies or legislation, or consolidation among customers. Customers may also choose to increase the amount of business they outsource, insource previously outsourced business, or change the concentration or location of their EMS suppliers to better manage their supply continuity risk. These customer decisions may impact, among other items, our revenue and margins, the need for future restructuring, the level of capital expenditures and our cash flows.

While the demand environment remains volatile, driven largely by technology shifts and increased competition in the Communications and Enterprise end markets, we remain committed to making the investments we believe are required to support our long-term objectives and to create shareholder value. These efforts include a focus on the diversification of our customer mix and product portfolios to address changing needs, including a larger emphasis on fulfillment and after-market services, as well as broadening our ATS capabilities, including expanding our aerospace and defense, healthcare, smart energy, and industrial offerings, and continuing to expand the breadth of our JDM offerings in the areas of storage, network switching and converged storage and servers. The costs of investments that we deem desirable may be prohibitive, and therefore prevent us from achieving these diversification objectives. In addition, the ramping activities associated with investments that we do make may be significant and could negatively impact our margins in the short and medium term. Simultaneously, we intend to continue to manage our costs and resources to maximize our efficiency and productivity.

To reduce our reliance on any one customer or end market (including the concentration of our revenues in the Communications and Enterprise end markets), we continue to target new customers and services, including through our efforts to expand our ATS end market. As we expand our business and open new sites, we may encounter difficulties that result in higher than expected costs associated with such activities. Potential difficulties related to such activities include our ability: to manage growth effectively; to maintain existing business relationships during periods of transition; to anticipate disruptions in our operations that may impact our ability to deliver to customers on time, produce quality products and ensure overall customer satisfaction; and to respond rapidly to changes in customer demand or volumes. We may also encounter difficulties in ramping and executing new programs. We may require significant investments in additional capabilities and increased working capital to support these new programs, including those associated with business acquisitions, and may generate lower margins or losses during and/or following the ramp period. There can be no assurance that our increased investments will benefit our financial performance or result in business growth. As we pursue opportunities in new markets or technologies, we may encounter challenges due to our limited knowledge or experience in these areas. In addition, the success of new business models or programs depends on a number of factors including: understanding the new business or markets; timely and successful product development; market acceptance; the effective management of purchase commitments and inventory levels in line with anticipated demand; the development or acquisition of appropriate intellectual property and capital investments, to the extent required; the availability of materials in adequate quantities and at appropriate costs to meet anticipated demand; and the risk that new offerings may have quality or other defects in the early stages of introduction. Any of these factors could prevent us from realizing the anticipated benefits of growth in new markets or technologies, which could materially adversely affect our business and operating results. See “Summary of 2017” below for a discussion of our exit from the solar panel manufacturing business.

Recent developments:

Anticipated Acquisition to Broaden Capabilities in the Aerospace and Defense Market:

In January 2018, we entered into a definitive agreement to acquire Atrenne, a leading U.S. - based designer and manufacturer of ruggedized electromechanical solutions. This acquisition is intended to expand our capabilities, improve our diversification, and bolster our leadership position within the aerospace and defense market. Atrenne's capabilities include connectors, machining, and the thermal and mechanical design and manufacture of ruggedized chassis and enclosures, primarily for military and commercial aerospace applications. We also believe that Atrenne's capabilities in the design and manufacture of value-added mechanical solutions will expand our service offerings for industrial customers. The purchase price for Atrenne is approximately $139 million (subject to specific adjustments as set forth in the definitive agreement), which we intend to finance with a combination of cash on hand and availability under the revolving portion of our credit facility. The transaction is expected to close in the second quarter of 2018, subject to receipt of applicable regulatory approvals and satisfaction of other customary closing conditions. However, there can be no assurance that this acquisition will be consummated in a timely manner, or at all.

Toronto Real Property Update:

As previously disclosed, and assuming the timely satisfaction of various conditions, we currently anticipate the sale of our Toronto corporate headquarters and manufacturing operations to close during 2018. See “Liquidity — Cash requirements” below. However, there can be no assurance that this transaction will be completed during 2018, or at all. Whether or not the sale is consummated, we are moving our existing Toronto manufacturing operations to another location in the Greater Toronto area, and in connection therewith, entered into a long-term lease in November 2017 with occupancy anticipated to commence at the end of the first quarter of 2018. We currently expect to complete the transition to this new manufacturing location by the end of the first quarter of 2019. In addition, should the sale be consummated, we will enter into a short-term interim lease with the purchasers of our Toronto real property for our existing corporate headquarters and manufacturing premises on a portion of the real estate on a rent-free basis (subject to certain payments, including taxes and utilities), followed by a long-term lease with such purchasers for our new corporate headquarters, and intend to move such headquarters to a temporary location while space in a new office building (to be built by such purchasers on the site of our current location) is under construction. The temporary office relocation is currently expected to occur by the end of the first quarter of 2019. We will incur significant costs throughout the transition period (which commenced in the fourth quarter of 2017 and is expected to continue into 2019) to relocate our corporate headquarters and to transfer our Toronto manufacturing operations to its new location, and as we prepare and customize the new site to meet our manufacturing needs. These costs will consist of building improvements and new equipment which we will capitalize, as well as transition-related costs which we will record in other charges. The costs, timing, and execution of these relocations could have a material adverse impact on our business, our operating results and our financial position. See “Liquidity — Cash requirements” below and notes 16(d) and 18 to our 2017 audited consolidated financial statements.

End Markets:

Commencing in the first quarter of 2017, we aligned our end markets into two customer focused areas: Advanced Technology Solutions (ATS) and Connectivity & Cloud Solutions (CCS). Our ATS end market consists of our former Diversified and Consumer end markets, and is comprised of our aerospace and defense, industrial, smart energy, healthcare, semiconductor equipment, and consumer businesses. CCS consists of our Communications and Enterprise end markets (the latter of which is comprised of our servers and storage businesses, which were combined into one end market as a result of their converging technologies). All period percentages herein reflect these changes.

The competitive landscape in the CCS area remains aggressive, as demand growth is moving from traditional enterprise network infrastructure providers to cloud-based service providers, resulting in aggressive bidding from EMS providers and increased competition from original design manufacturers as they further penetrate these markets. In addition, although we offered a broad range of services to our CCS customers in 2017, we experienced a shift in the mix of our programs, in particular, growth in our lower-margin fulfillment services. This shift in mix, combined with the pricing pressures described above, demand volatility, and investments we have made to grow our higher-value added after-market services, resulted in lower than anticipated revenues and margins in our CCS businesses during 2017. As a result of the high concentration of our business in the CCS marketplace, we expect continued competitive pressures, aggressive pricing and technology-driven demand shifts, as well as certain materials constraints, to negatively impact our CCS businesses in future periods. We intend to continue to monitor these dynamics and focus on cost management in response to these factors, including our new cost efficiency initiative (discussed under “Restructuring Update” below), which is targeted, in part, towards margin improvements in our CCS businesses.

Restructuring Update:

During the fourth quarter of 2017, we recorded $6.6 million of restructuring charges to complete actions previously identified as part of our OD and GBS initiatives, and an additional $8.0 million of restructuring charges in connection with our new cost efficiency initiative described below.

In response to challenging markets and continued margin pressures (driven primarily by volatility in our Communications and Enterprise end markets), we announced in October 2017 our intention to implement additional restructuring actions in the near term to further streamline our business and improve our margin performance, and engaged an outside consultant to identify cost reduction opportunities throughout our network, including through increased operational efficiencies and productivity improvements. In connection therewith, we have commenced the implementation of additional restructuring actions under a new cost efficiency initiative. Such initiative will include reductions to our workforce, the potential consolidation of certain sites to better align capacity and infrastructure with current and anticipated customer demand, related transfers of customer programs and production, re-alignment of business processes, management reorganizations, and other associated activities. We currently estimate that we will incur aggregate restructuring charges of between $50.0 million and $75.0 million, which will consist primarily of cash charges, with respect to our cost efficiency initiative, including $8.0 million of the $14.6 million in cash restructuring charges we recorded in the fourth quarter of 2017. We currently expect restructuring charges under this initiative to continue through mid-2019. We anticipate that our cost efficiency initiative, combined with the anticipated expansion of our ATS product mix, will result in improved non-IFRS operating margins by the second half of 2018.

Launch of New NCIB:

In November 2017, the Toronto Stock Exchange (TSX) accepted our notice to launch a new NCIB (2017 NCIB), which allows us to repurchase, at our discretion, until the earlier of November 12, 2018 or the completion of the purchases thereunder, up to approximately 10.5 million subordinate voting shares (representing approximately 7.3% of our total outstanding subordinate voting and multiple voting shares at the time of launch) in the open market, or as otherwise permitted. Since the commencement of the 2017 NCIB through February 14, 2018, we paid $36.9 million (including transaction fees) to repurchase and cancel 3.5 million subordinate voting shares at a weighted average price of $10.48 per share.

Senior Management Changes:

Mr. Todd Cooper was appointed Chief Operations Officer, effective January 4, 2018, following the departure of Mr. Glen McIntosh at the end of 2017.

We previously announced the departure of Mr. Darren Myers, our former Chief Financial Officer, effective at the end of July 2017. Upon such announcement, we appointed Mr. Mandeep Chawla (formerly Senior Vice President, Finance) as interim Chief Financial Officer during our search for a permanent replacement. After conducting a full and diligent search process, we appointed Mr. Chawla as Chief Financial Officer, effective October 19, 2017.

Board Member Resignations:

During 2017, two of our board members, Mr. Joseph M. Natale and Mr. Thomas S. Gross, resigned from Celestica's Board.

Program Transfer:

In September 2017, one of our existing aerospace and defense customers outsourced certain operations to us. As part of a 10-year “operate-in-place” agreement, we currently provide manufacturing and after-market repair services for electromechanical and electronic assemblies across a wide array of technologies at the customer’s site. We have also assumed the workforce assigned to these operations and purchased approximately $5 million in related inventory. This agreement further expanded our relationship with this customer, enhanced our ability to provide end-to-end product lifecycle solutions to our customers, and supports our strategy of growing our aerospace and defense business.

Brazilian Assessment:

In 2017, the Brazilian Ministry of Science, Technology, Innovation and Communications (MCTIC) issued assessments seeking to disqualify certain amounts of research and development (R&D) expenses for the years 2006 to 2009, which entitled our Brazilian subsidiary (which ceased operations in 2009) to charge reduced sales tax levies to its customers. The assessments against our Brazilian subsidiary (including interest and penalties) total approximately 39 million Brazilian real (approximately $12 million at year-end exchange rates) for such years.

Although we cannot predict the outcome of this matter, we believe that our R&D activities for the period are supportable, and it is probable that our position will be sustained upon full examination by the appropriate Brazilian authorities and, if necessary, upon consideration by the Brazilian judicial courts. Our position is supported by our Brazilian legal advisers.

See "Summary of 2017" below for an update on our exit from the solar panel manufacturing business.

Summary of 2017

Our consolidated financial statements have been prepared in accordance with IFRS as issued by the IASB and accounting policies we adopted in accordance with IFRS. These consolidated financial statements reflect all adjustments that are, in the opinion of management, necessary to present fairly our financial position as at December 31, 2017 and the financial performance, comprehensive income and cash flows for the year ended December 31, 2017. See "Critical Accounting Policies and Estimates" below.

The following table sets forth certain key operating results and financial information for the periods indicated (in millions, except per share amounts):

	Year ended December 31		
	2015	2016	2017
Revenue	$ 5,639.2	$ 6,016.5	$ 6,110.5
Gross profit	391.1	427.6	417.8
Selling, general and administrative expenses (SG&A)	207.5	211.1	203.2
Other charges	35.8	25.5	37.0
Net earnings	66.9	136.3	105.0
Diluted earnings per share	$ 0.42	$ 0.95	$ 0.72

	December 31 2016	December 31 2017
Cash and cash equivalents	$ 557.2	$ 515.2
Borrowings under credit facility	227.5	187.5
Total assets	2,822.3	2,944.7

Revenue of $6.1 billion for 2017 increased 2% compared to 2016. Compared to 2016, revenue dollars in 2017 from our Enterprise end market were relatively flat, as growth from new programs primarily in the first half of 2017 was offset by softer demand in the second half of 2017. Revenue dollars from our ATS end market were also relatively flat compared to 2016 as growth in our semiconductor business and from new programs (discussed in "Operating Results" below) were offset by a 7% decrease in revenue due to our exit from the solar panel manufacturing business, and a decrease in revenue due to the completion of programs with one of our then-largest consumer customers during the third quarter of 2016. Despite revenue dollars and revenue concentration (32%) being relatively flat compared to 2016, revenue concentration from our ATS end market increased to 33% of total revenue for the fourth quarter of 2017, compared to 29% for the fourth quarter of 2016 and 31% for the third quarter of 2017. We currently expect revenue from our ATS end market to continue to grow in future periods from organic growth, as well as from acquisition activities (however, there can be no assurance that any acquisitions will occur in a timely manner, or at all). Revenue dollars from our Communications end market increased 4% compared to 2016 primarily due to demand strength in certain programs and new program growth (including with respect to our fulfillment services and JDM programs). Although Communications revenue increased compared to 2016, we experienced slower growth rates (particularly in the second half of 2017) compared to the prior year primarily due to new programs from 2016 reaching their full production levels, and increased pricing pressures and late changes in demand from certain customers in 2017.

Gross profit of $417.8 million (6.8% of total revenue) for 2017 decreased 2% compared to $427.6 million (7.1% of total revenue) for 2016. Gross profit and gross margin for 2017 were negatively impacted by unfavorable changes in program mix, increased pricing pressures and higher ramping costs, offset in part by margin improvements in our ATS end market. During 2017, our Communications and Enterprise end markets faced increased pricing pressures (see "Recent developments — End markets" above), and were also negatively impacted by a higher concentration than in 2016 of new programs, including fulfillment services, that contributed significantly lower gross profit than our historical full-service traditional EMS programs. We also incurred additional ramping costs with respect to new programs, including aerospace and defense programs, as well as programs that required the establishment of infrastructures in multiple jurisdictions. Gross profit and gross margin for our ATS end market in 2017 increased compared to the prior year, as a result of increases in each of our semiconductor and former solar businesses (the latter as a result of lower provisions recorded in 2017), offset in part by the completion of consumer programs which benefited gross margin in 2016. The gross margin for our former solar business was negatively impacted in 2016 by higher provisions (accounting for 15 basis points in 2016), primarily to write-down the carrying value of our solar panel inventory to then-recoverable amounts). SG&A for 2017 decreased $7.9 million to $203.2 million compared to 2016, primarily due to lower foreign exchange losses, stock-based compensation expense, and variable expenses in 2017 (described under "Operating Results" below). Other charges for 2017 increased $11.5 million to $37.0 million compared to 2016, primarily due to $12 million of recoveries of damages related to a legal settlement in 2016, and $3.1 million in higher acquisition-related costs in 2017, offset in part by the costs to settle a legal matter during 2016. Net earnings for 2017 of $105.0 million decreased $31.3 million compared to 2016, primarily due to $9.8 million in lower gross profit and $11.5 million in higher other charges in 2017 as discussed above, as well as $14 million of refund interest income that benefited 2016.

New tax legislation was enacted in the U.S. in December 2017. In connection therewith, in the fourth quarter of 2017, we recorded a one-time, non-cash increase to our deferred income tax expense of $2.0 million, to re-value our recognized net deferred tax assets. Net income tax expense for 2016 was favorably impacted by a reversal of $45 million Canadian dollars (approximately $34 million at the exchange rate at the time of recording) in provisions previously recorded for tax uncertainties related to the resolution of a transfer pricing matter for one of our Canadian subsidiaries, offset in part by withholding taxes, deferred tax expense relating to the anticipated repatriation of undistributed earnings from certain Chinese subsidiaries, and negative impacts related to taxable foreign exchange. See "Operating Results — Income taxes" below for further details.

We made the decision in the fourth quarter of 2016 to exit the solar panel manufacturing business. As part of this exit, we terminated (prior to its scheduled expiration) a supply agreement with an Asia-based solar cell supplier under which we had made specific cash advances. All such cash advances were repaid in full by the end of the second quarter of 2017 (December 31, 2016 — $12.5 million). Under this supply agreement, we also manufactured and sold completed solar panels to this supplier as a customer (discussed below). In connection with our exit from this business, we wrote down the carrying values of our solar panel manufacturing equipment (by $19.0 million) and inventories (by approximately $10 million) during 2016 to then-recoverable amounts, and completed production of the final solar panels in the first quarter of 2017. During 2017, we incurred operating losses related to the wind-down of our solar panel manufacturing operations, and recorded additional provisions of $0.9 million to further write down the carrying value of our remaining solar panel inventory (to reflect lower prices obtained in then-current purchase orders), a provision of $0.5 million to write down the carrying value of our solar accounts receivable (primarily as a result of a solar customer's bankruptcy) to recoverable amounts, and net impairment charges of $3.8 million (through restructuring) to further write down the carrying value of our solar panel manufacturing equipment (which was classified as assets held-for-sale) to its estimated fair value less costs to sell, based on executed sale agreements. Such equipment was valued at $2.6 million as of December 31, 2017. We currently expect the sale of such equipment to be completed by the end of the first quarter of 2018. A substantial portion of our solar panel manufacturing equipment was subject to finance lease agreements. As of December 31, 2017, our outstanding lease obligations for this equipment totaled $11.1 million. In anticipation of the sale, we terminated and settled these lease obligations in full in January 2018. During the third quarter of 2017, we shipped all of our remaining solar panel inventory to customers, including to the former solar supplier described above. As of December 31, 2017, we had $6.7 million of outstanding solar accounts receivable, all from the former solar supplier described above, which we expect to collect in the first quarter of 2018. If we are unable to recover the carrying value of these amounts owed to us, we will incur additional write-downs to these receivables in future periods.

Our cash and cash equivalents at December 31, 2017 were $515.2 million (December 31, 2016 — $557.2 million). Our cash provided by operating activities of $127.0 million for 2017 decreased $46.3 million compared to $173.3 million for 2016, primarily due to $52 million of income tax refunds which benefited cash in 2016 and the decrease in net earnings in 2017 compared to 2016, offset in part by lower working capital requirements in 2017 as compared to the prior year (discussed below).

At December 31, 2017, we sold $80.0 million (December 31, 2016 — $50.0 million) of accounts receivable (A/R) under our A/R sales program and sold $52.3 million (December 31, 2016 — $51.4 million) to a third-party bank under a customer's supplier financing program, all of which have been de-recognized from our accounts receivable balances. We utilized this customer's supplier financing program to substantially offset the effects of extended payment terms required by such customer on our working capital for the period. See “Capital Resources” below. We increased the amount of A/R sold under our A/R sales program in 2017 compared to 2016 as an alternative to drawing on the revolving portion of our credit facility (Revolving Facility).

At December 31, 2017, we had $187.5 million outstanding under the term loan portion of our credit facility (Term Loan) (December 31, 2016 — $212.5 million) and no amounts outstanding under our Revolving Facility (December 31, 2016 — $15.0 million). We repaid the remaining $15.0 million outstanding under the Revolving Facility in the first quarter of 2017, and made four scheduled quarterly principal repayments totaling $25.0 million under the Term Loan in each of 2016 and 2017. See “Liquidity and Capital Resources — Liquidity — Cash requirements” below.

We have repurchased subordinate voting shares in the open market and otherwise for cancellation in recent years pursuant to NCIBs and substantial issuer bids (SIBs), which allow us to repurchase a limited number of subordinate voting shares during a specified period. The maximum number of subordinate voting shares we are permitted to repurchase for cancellation under each NCIB is reduced by the number of subordinate voting shares purchased in the open market during the term of such NCIB to satisfy delivery obligations under our stock-based compensation plans. We enter into program share repurchases (PSRs) from time to time as part of the NCIB process (if permitted by the TSX), pursuant to which we make a prepayment to a broker for the right to receive a variable number of subordinate voting shares upon such PSR's completion. Under such PSRs, the price and number of subordinate voting shares to be repurchased by us is generally determined based on a discount to the volume weighted-average market price of such shares during the term of the PSR, subject to certain terms and conditions. The subordinate voting shares repurchased under any PSR are cancelled upon such PSR's completion.

In November 2017, the TSX accepted our notice to launch the 2017 NCIB. See “Overview — Recent developments” above. Since the commencement of this NCIB through December 31, 2017, we paid $19.9 million (including transaction fees) to repurchase and cancel 1.9 million subordinate voting shares at a weighted average price of $10.58 per share. In addition, we repurchased 1.4 million subordinate voting shares during 2017 (0.3 million of which were repurchased under the 2017 NCIB) to satisfy delivery obligations under our stock-based compensation plans.

See “Overview — Recent developments” above for a discussion of our recent acquisition activities.

Summary of 2016

Revenue of $6.0 billion for 2016 increased 7% compared to 2015. Compared to 2015, revenue dollars in 2016 from our Communications end market increased 12%, primarily driven by demand strength and new program wins. Revenue dollars from our ATS end market increased 8% from 2015 primarily due to new program ramps in our smart energy business (including new solar programs prior to our exit from that business), and a new “operate-in-place” program outsourced to us from one of our aerospace and defense customers in April 2015, offset in part by completion of programs with one of our then-largest Consumer customers. Revenue dollars from our Enterprise end market in 2016 decreased 3% compared to 2015, primarily due to customer demand softness.

Gross profit of $427.6 million (7.1% of total revenue) for 2016 increased 9% compared to $391.1 million (6.9% of total revenue) for 2015, primarily driven by higher revenue levels in 2016 and margin improvements in our ATS end market, including our semiconductor business and our then-solar business, partially offset by changes in program mix as some of our 2016 programs contributed lower gross profit than past programs. Our solar margins for 2016 improved compared to 2015 despite the higher provisions recorded in 2016 (accounting for approximately 15 basis points) primarily to write down the value of our solar panel inventory in the second half of 2016 to then-current market prices (see discussion above). SG&A for 2016 of $211.1 million increased compared to $207.5 million in 2015. Net earnings for 2016 of $136.3 million were $69.4 million higher compared to 2015, primarily due to higher gross profit, lower other charges (driven by $12 million of recoveries of damages related to a legal settlement in 2016) and a net benefit of approximately $32 million related to income taxes, comprised primarily of income tax recoveries and related refund interest income attributable to the resolution of certain previously disputed tax matters in Canada, offset in part by withholding taxes and income tax expense related to taxable foreign exchange. See “Operating Results — Income taxes” below for further details.

In connection with our decision in the fourth quarter of 2016 to exit the solar panel manufacturing business, we recorded restructuring charges in the fourth quarter of 2016 to close our solar panel manufacturing operations at our two locations, including $19.0 million in impairment charges to write down the carrying value of our solar panel manufacturing equipment to recoverable amounts. We also recorded inventory provisions of approximately $10 million in 2016, primarily in the third quarter of 2016, to write down our solar inventory to recoverable amounts as a charge through cost of sales.

Our cash and cash equivalents at December 31, 2016 were $557.2 million (December 31, 2015 — $545.3 million). Our cash provided by operating activities was $173.3 million for 2016 compared to $196.3 million for 2015, primarily due to higher working capital requirements in 2016, offset in part by the increase in net earnings for 2016 described above and the cash income tax refund of $52 million we received during the fourth quarter of 2016, representing the refund of cash previously deposited on account with the Canadian tax authorities and related interest income resolution of previously disputed tax matters. See “Operating Results — Income taxes” below for further details.

At December 31, 2016, we sold $50.0 million (December 31, 2015 — $50.0 million) of accounts receivable (A/R) under our A/R sales program and sold $51.4 million to a third-party bank under a customer's supplier financing program that we joined in the fourth quarter of 2016. See “Liquidity and Capital Resources — Liquidity — Capital requirements” below.

At December 31, 2016, we had an aggregate of $227.5 million outstanding under our credit facility, including $212.5 million outstanding under the Term Loan (December 31, 2015 — an aggregate of $262.5 million outstanding under our credit facility, including $237.5 million outstanding under the Term Loan). During the first quarter of 2016, we borrowed $40.0 million under the Revolving Facility, partly to fund the PSR described below. During 2016, we repaid $50.0 million of the amount outstanding under the Revolving Facility and made four scheduled quarterly principal repayments totaling $25.0 million under the Term Loan. See “Liquidity and Capital Resources — Liquidity — Cash requirements” below.

On February 22, 2016, the TSX accepted our notice to launch an NCIB (2016 NCIB) which was amended in March 2016 to permit PSRs. The 2016 NCIB allowed us to repurchase, at our discretion, until the earlier of February 23, 2017 or the completion of purchases thereunder, up to approximately 10.5 million subordinate voting shares (representing approximately 7.3% of our total outstanding subordinate voting and multiple voting shares at the time of launch) in the open market or as otherwise permitted, subject to the normal terms and limitations of such bids. During 2016, we paid an aggregate of $34.3 million (including transaction fees) to repurchase and cancel 3.2 million subordinate voting shares under the 2016 NCIB at a weighted average price of $10.69 per share, including 2.8 million subordinate voting shares repurchased at a weighted average price of $10.69 per share under a $30.0 million PSR funded in March 2016. We did not repurchase any subordinate voting shares for cancellation in 2016 prior to the launch of the 2016 NCIB, and we did not repurchase any shares for cancellation under the 2016 NCIB during 2017. The maximum number of subordinate voting shares we were permitted to repurchase for cancellation under the 2016 NCIB was reduced by 1.6 million subordinate voting shares we purchased in the open market during 2016 to satisfy delivery obligations under our stock-based compensation plans.

In November 2016, we acquired the business assets of Lorenz, Inc. and Suntek Manufacturing Technologies, SA de CV, collectively known as Karel Manufacturing (Karel) for a cash purchase price of $14.9 million. Karel is a manufacturing services company that specializes in complex wire harness assembly, systems integration, sheet metal fabrication, welding and machining serving primarily aerospace and defense customers. This acquisition supported our strategy to accelerate our growth in the aerospace and defense market through the addition of value-add capabilities and services.

Other performance indicators:

In addition to the key operating results and financial information described above, management reviews the following measures (which are not measures defined under IFRS):

	1Q16	2Q16	3Q16	4Q16	1Q17	2Q17	3Q17	4Q17
Cash cycle days:								
Days in A/R	45	43	43	42	47	43	44	44
Days in inventory	60	59	58	55	62	61	64	66
Days in A/P	(58)	(55)	(55)	(53)	(59)	(56)	(56)	(56)
Cash cycle days	47	47	46	44	50	48	52	54
Inventory turns	6.1x	6.2x	6.3x	6.6x	5.9x	6.0x	5.7x	5.6x

	2016				2017			
	March 31	June 30	September 30	December 31 (i)	March 31 (i)	June 30 (i)	September 30 (i)	December 31 (i)
Amount of A/R sold (in millions)	$ 60.0	$ 60.0	$ 50.0	$ 101.4	$ 94.5	$ 115.4	$ 105.1	$ 132.3

(i) Includes $52.3 million of A/R sold to a third-party bank at December 31, 2017 ($55.1 million at September 30, 2017; $65.4 million at June 30, 2017; $44.5 million at March 31, 2017; $51.4 million at December 31, 2016) in connection with a customer's uncommitted supplier financing program that we joined in the fourth quarter of 2016. We utilized this program to receive earlier payment on such customer's A/R, to substantially offset the effect of extended payment terms required by such customer on our working capital.

Days in A/R is calculated as the average A/R for the quarter divided by the average daily revenue. Days in inventory is calculated as the average inventory for the quarter divided by the average daily cost of sales. Days in accounts payable (A/P) is calculated as the average A/P for the quarter divided by average daily cost of sales. Cash cycle days is calculated as the sum of days in A/R and days in inventory, minus the days in A/P. Inventory turns is calculated as 365 divided by the number of days in inventory. A lower number of days in A/R, days in inventory, and cash cycle days, and a higher number of days in A/P and inventory turns generally reflect improved cash management performance.

We believe that cash cycle days (and the components thereof) and inventory turns are useful measures in providing investors with information regarding our cash management performance and are accepted measures of working capital management efficiency in our industry. These are not measures of performance under IFRS, and may not be defined and calculated in the same manner by other companies. These measures should not be considered in isolation or as an alternative to working capital as an indicator of performance.

Management also reviews other non-IFRS measures including adjusted net earnings, operating margin, adjusted ROIC and free cash flow. See "Non-IFRS measures" below.

Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with IFRS requires management to make judgments, estimates and assumptions that affect the application of accounting policies and the reported amounts of assets and liabilities, revenue and expenses, and the related disclosures of contingent assets and liabilities. We base our estimates and assumptions on current facts, historical experience and various other factors that we believe are reasonable under the circumstances. Our assessment of these factors forms the basis for our judgments on the carrying values of our assets and liabilities, and the accrual of our costs and expenses. Actual results could differ materially from these estimates and assumptions. We review our estimates and underlying assumptions on an ongoing basis and make revisions as determined necessary by management. Revisions are recognized in the period in which the estimates are revised and may impact future periods as well. Significant accounting policies and methods used in the preparation of our consolidated financial statements are described in note 2 to our 2017 audited consolidated financial statements. The following is a discussion of those accounting policies which management considers to be “critical,” defined as accounting policies that management believes are both most important to the portrayal of our financial condition and results and require application of management’s most difficult, subjective or complex judgments, often as a result of the need to make estimates about the effects of matters that are inherently uncertain.

Key sources of estimation uncertainty and judgment: We have applied significant estimates and assumptions in the following areas which we believe could have a significant impact on our reported results and financial position: our valuations of inventory, assets held for sale and income taxes; the amount of our restructuring charges or recoveries; the measurement of the recoverable amounts of our cash generating units (CGUs, as defined below), which includes estimating future growth, profitability, discount and terminal growth rates, and the fair value of our real property; our valuations of financial assets and liabilities, pension and non-pension post-employment benefit costs, employee stock-based compensation expense, provisions and contingencies; and the allocation of the purchase price and other valuations related to our business acquisitions.

We define a CGU as the smallest identifiable group of assets that cannot be tested individually and that generates cash inflows that are largely independent of the cash inflows from other assets or groups of assets. CGUs can be comprised of a single site, a group of sites, or a line of business.

We have also applied significant judgment in the following areas: the determination of our CGUs and whether events or changes in circumstances during the relevant period are indicators that a review for impairment should be conducted, and the timing of the recognition of charges or recoveries associated with our restructuring actions. The near-term economic environment could also impact certain estimates necessary to prepare our consolidated financial statements, including the estimates related to the recoverable amounts used in our impairment testing of our non-financial assets (see note 16(b) to our 2017 audited consolidated financial statements), and the discount rates applied to our net pension and non-pension post-employment benefit assets or liabilities (see note 19 to our 2017 audited consolidated financial statements). Other than changes to our estimates of the fair value of our solar panel manufacturing equipment, we did not identify any triggering event during 2017 that would indicate the carrying amount of our assets or CGUs may not be recoverable.

Inventory valuation:

We procure inventory and manufacture based on specific customer orders and forecasts and value our inventory on a first-in, first-out basis at the lower of cost and net realizable value. The cost of our finished goods and work-in-progress includes direct materials, labor and overhead. We may require valuation adjustments if actual market conditions or demand for our customers' products or services are less favorable than originally projected. The determination of net realizable value involves significant management judgment. We consider factors such as shrinkage, the aging of and future demand for the inventory, and contractual arrangements with customers. We attempt to utilize excess inventory in other products we manufacture or return inventory to the relevant suppliers or customers. We use future sales volume forecasts to estimate excess inventory on-hand. A change to these assumptions may impact our inventory valuation and our gross margins. Should circumstances change, we may adjust our previous write-downs in our consolidated statement of operations in the period a change in estimate occurs. See “Operating Results — Gross margin” below for a discussion of the write down in the value of our solar panel inventory during 2017 and 2016.

Assets classified as held for sale:

We classify assets as held for sale if the carrying amount will be recovered principally through a sale transaction rather than through continued use. Management must be committed to the sale transaction and the asset must be immediately available for sale in its present condition to qualify as an asset held for sale. Assets classified as held for sale are measured at the lower of their carrying amount and fair value less costs to sell, and are no longer depreciated. The determination of fair value less costs to sell involves judgment by management of the probability and timing of disposition and the expected amount of recoveries and costs. We may engage independent third parties to assist in the determination of the estimated fair values less costs to sell for assets classified as held for sale. At the end of each reporting period, we evaluate the appropriateness of our estimates and assumptions. We may require adjustments to reflect actual experience or changes in estimates. During the second quarter of 2017, we wrote down the value of our solar panel manufacturing equipment to its estimated fair value less costs to sell based on then-broker estimates. We recorded a $1.4 million reversal to such write-down in the fourth quarter of 2017 based on executed sales agreements. See “Summary of 2017” for details of charges recorded with respect to our solar panel manufacturing equipment.

Income taxes:

We record income tax expense or recovery based on taxable income earned or loss incurred in each tax jurisdiction where we operate at the enacted or substantively enacted tax rate applicable to that income or loss. In the ordinary course of business, we engage in many transactions for which the ultimate tax outcome is uncertain and therefore estimates are required for exposures related to potential and actual examinations by taxation authorities. We review these transactions and exposures and record tax liabilities for open years based on our assessment of many factors, including past experience and interpretations of tax law applied to the facts of each matter. Management periodically evaluates the positions taken in our tax returns with respect to situations in which applicable tax rules are subject to interpretation. We establish provisions related to tax uncertainties where appropriate, based on our estimate of the amount that ultimately will be paid to or received from the tax authorities. The various judgments and estimates by management in establishing provisions related to tax uncertainties significantly affect the amounts we recognize in our consolidated financial statements. The determination of tax liabilities is subjective and generally involves a significant amount of judgment. We believe that our income tax liability reflects the probable outcome of our income tax obligations based on known facts and circumstances; however, the final income tax outcome may be different from our estimates. A change to these estimates could impact our income tax provision.

We recognize deferred income tax assets to the extent we believe it is probable, based on management’s estimates, that future taxable profit will be available against which the deductible temporary differences as well as unused tax losses and tax credit carryforwards can be utilized. We consider factors such as the reversal of taxable temporary differences, projected future taxable income, the character of the income tax asset, tax planning strategies, changes in tax laws and other factors. A change to these factors could impact the amount of deferred income tax assets we recognize. We review our deferred income tax assets at each reporting date and reduce them to the extent it is no longer probable that we will realize the related tax benefits.

The U.S. Tax Cuts and Jobs Act (U.S. Tax Reform) was enacted on December 22, 2017 and became effective January 1, 2018. Although the legislative changes contained in the U.S. Tax Reform are extensive and the interpretation of several aspects of such Tax Reform is still unclear, we recorded an income tax expense for all significant known and determinable impacts during the fourth quarter of 2017. In connection with the reduction in U.S. federal corporate tax rates from 35% to 21%, we recorded a one-time, non-cash increase to our deferred income tax expense of $2.0 million, or $0.01 per diluted share, to re-value our recognized net deferred tax assets. We believe we have recorded all significant one-time impacts resulting from the U.S. Tax Reform in the fourth quarter of 2017, but will continue to assess additional impacts, if any, throughout 2018 as they become known due to changes in our interpretations and assumptions, as well as additional regulatory guidance that may be issued.

Certain aspects of the U.S. Tax Reform are not expected to have a significant impact on us, including the one-time transition tax on foreign unremitted earnings and the base erosion and anti-abuse tax, while other aspects of the U.S. Tax Reform may have a positive impact on our future U.S. income tax provision, such as the elimination of the U.S. corporate alternative minimum tax. Although we cannot quantify the potential future impact at this time, we do not expect the U.S. Tax Reform to have a significant impact on our future global tax rate.

Goodwill, intangible assets and property, plant and equipment:

We estimate the useful lives of intangible assets and property, plant and equipment based on the nature of the asset, historical experience, the projected period of expected future economic benefits to be provided by the asset, the terms of any related customer contract, and expected changes in technology. We review the carrying amounts of goodwill, intangible assets and property, plant and equipment for impairment on an annual basis and whenever events or changes in circumstances (triggering events) indicate that the carrying amount of an asset or CGU may not be recoverable. If any such indication exists, we test the carrying amount of an asset or a CGU for impairment. In addition to an assessment of triggering events during the year, we conduct an annual impairment assessment in the fourth quarter of the year to correspond with our annual planning cycle. Judgment is required in the determination of our CGUs and whether events or changes in circumstances during the year are indicators that a review for impairment should be conducted prior to the annual assessment.

We recognize an impairment loss when the carrying amount of an asset, CGU or group of CGUs exceeds its recoverable amount. The recoverable amount of an asset, CGU or group of CGUs is measured as the greater of its expected value-in-use and its fair value less costs to sell. The process of determining the recoverable amount is subjective and requires management to exercise significant judgment in estimating future growth, profitability, discount and terminal growth rates, and in projecting future cash flows, among other factors. Our expected value-in-use is determined based on the discounted cash flows of the relevant asset, CGU or group of CGUs. The process of determining fair value less costs to sell requires valuations and use of appraisals. Where applicable, we engage independent brokers to obtain market prices to estimate our real property and other asset values. We recognize impairment losses in our consolidated statement of operations. We first allocate impairment losses in respect of a CGU or group of CGUs to reduce the carrying amount of its goodwill, and then to reduce the carrying amount of other assets in such CGU or group of CGUs generally on a pro rata basis. See notes 16(a) and 16(b) to our 2017 audited consolidated financial statements for a description of impairment charges recorded through restructuring during 2016 and 2017, and impairment charges to property, plant and equipment recorded in 2015.

We do not reverse impairment losses for goodwill in future periods. We reverse impairment losses for property, plant and equipment and intangible assets if the losses we recognized in prior periods no longer exist or have decreased as a result of changes in circumstances. At each reporting date, we review for indicators that could change the estimates we used to determine the recoverable amount of the relevant assets. The amount of the reversal will be limited to the carrying amount that would have been determined, net of depreciation or amortization, had we recognized no impairment loss in prior periods.

Restructuring charges:

We incur restructuring charges relating to workforce reductions, site consolidations, and costs associated with businesses we are downsizing or exiting. Our restructuring charges include employee severance and benefit costs, gains, losses or impairments related to owned sites and equipment we no longer use and which are available for sale, impairment of related intangible assets, and costs related to leased sites and equipment we no longer use.

The recognition of restructuring charges requires management to make certain judgments and estimates regarding the nature, timing and amounts associated with our restructuring plans. Our major assumptions include the number of employees to be terminated and the timing of such terminations, the measurement of termination costs, the timing and amount of lease obligations and any anticipated sublease recoveries from exited sites, and the timing of disposition and estimated fair values less costs to sell of assets we no longer use and which are available for sale. We develop detailed plans and record termination costs in the period that employees are informed of their termination. For owned sites and equipment that are no longer in use and are available for sale, we recognize an impairment loss based on their fair value less costs to sell, with fair value estimated based on market prices for similar assets. We may engage independent third parties to determine the estimated fair values less costs to sell for these assets. For leased sites that we intend to exit, the lease obligation costs represent future contractual lease payments and cancellation fees, if any, less estimated sublease recoveries, if any. We recognize any change in provisions due to the passage of time as finance costs. To estimate future sublease recoveries, we engage independent brokers to determine the estimated tenant rents we can expect to realize. At the end of each reporting period, we evaluate the appropriateness of our restructuring charges and balances. Adjustments to the recorded amounts may be required to reflect actual experience or changes in estimates for future periods. See note 16(a) to our 2017 audited consolidated financial statements for a discussion of restructuring charges recorded in 2015 — 2017.

Legal and other contingencies:

In the normal course of our operations, we may be subject to lawsuits, investigations and other claims, including environmental, labor, product, customer disputes and other matters. The filing of a suit or formal assertion of a claim does not automatically trigger a requirement to record a provision. We recognize a provision for loss contingencies, including legal claims, based on management’s estimate of the probable outcome. Judgment is required when there is a range of possible outcomes. Management considers the degree of probability of the outcome and the ability to make a reasonable estimate of the loss. We may also use third party advisors in making our determination. The ultimate outcome, including the amount and timing of any payments required, may vary significantly from our original estimates. Potential material legal and other contingent obligations that have not been recognized as provisions, as the outcome is remote or not probable, or the amount cannot be reliably estimated, are disclosed as contingent liabilities.

Warranty:

We offer product and service warranties to our customers. We record a provision for future warranty costs based on management's estimate of probable claims under these warranties. In determining the amount of the provision, we consider several factors including the terms of the warranty (which vary by customer, product or service), the current volume of products sold or services rendered during the warranty period, and historical warranty information. We review and adjust these estimates as necessary to reflect our experience and new information. The amount and aging of our provision will vary depending on various factors including the length of the warranty offered, the remaining life of the warranty and the extent and timing of warranty claims. We classify the portion of our warranty provision for which payment is expected in the next twelve months as current, and the remainder as non-current.

Financial assets and financial liabilities:

We review financial assets at each reporting date and these are deemed to be impaired when objective evidence resulting from one or more events subsequent to the initial recognition of the asset indicates the estimated future cash flows of the asset have been negatively impacted. We measure an impairment loss as the excess of the carrying amount over the present value of the estimated future cash flows discounted using the financial asset's original discount rate, and we recognize this loss in our consolidated statement of operations.

We value our derivative assets and liabilities based on inputs that are either readily available in public markets or derived from information available in public markets. The inputs we use include discount rates and forward exchange rates. Changes in these inputs can cause significant volatility in the fair value of our financial instruments in the short-term.

We enter into forward exchange contracts and swaps to hedge the cash flow risk associated with firm purchase commitments and forecasted transactions in foreign currencies that are considered highly probable and to hedge foreign-currency denominated balances. We use estimates to forecast future cash flows and the future financial position of net monetary assets or liabilities denominated in foreign currencies. We apply hedge accounting to those hedge transactions that are considered effective. Management assesses the effectiveness of hedges by comparing actual outcomes against these estimates on a regular basis. Subsequent revisions in estimates of future cash flow forecasts, if significant, may result in the discontinuation of hedge accounting for that hedge.

Pension and non-pension post-employment benefits:

We have pension and non-pension post-employment benefit costs and liabilities that are determined from actuarial valuations. Actuarial valuations require management to make certain judgments and estimates relating to salary escalation, compensation levels at the time of retirement, retirement ages, the discount rate used in measuring the net interest on the net defined benefit asset or liability, and expected healthcare costs (as applicable). These actuarial assumptions could change from period-to-period and actual results could differ materially from the estimates originally made by management. The fair values of our pension assets were based on a measurement date of December 31, 2017. We evaluate our assumptions on a regular basis, taking into consideration current market conditions and historical data. Market driven changes may affect the actual rate of return on plan assets compared to our assumptions, as well as our discount rates and other variables which could cause actual results to differ materially from our estimates. Changes in assumptions could impact our defined benefit pension plan valuations and our future defined benefit pension expense and required funding.

To mitigate the actuarial and investment risks of our defined benefit pension plans, we from time to time purchase annuities (using existing plan assets) from third party insurance companies for certain, or all, plan participants. The purchase of annuities by the pension plan substantially hedges the financial risks associated with the pension obligations. Where annuities are purchased on behalf of, and held by the pension plan, the relevant employer retains the ultimate responsibility for the payment of benefits to plan participants, and we retain the pension assets and liabilities on our consolidated balance sheet. These annuity purchases have resulted in losses in past periods (and may apply to future annuity purchases), as a result of the reduction in the value of the plan assets to the value of the plan obligations as of the date of the annuity purchase. We record these non-cash losses in other comprehensive income (OCI) on our consolidated balance sheet and simultaneously reclassify such amounts to deficit in the same period. Alternatively, where we purchase annuities from insurance companies on behalf of applicable plan participants with the intention of winding up the relevant plan in the future (with the expectation of transferring the annuities to the individual plan members), the insurance company assumes responsibility for the payment of benefits to the relevant plan participants once the wind-up is complete. In this case, settlement accounting is applied to the purchase of the annuities and the non-cash loss (if any) is recorded in other charges in our consolidated statement of operations. In addition, both the pension assets and liabilities will be removed from our consolidated balance sheet once the wind-up of the plan is complete. See note 19(a) to our 2017 audited consolidated financial statements.

Employee stock-based compensation:

We generally grant stock options, performance share units (PSUs) and restricted share units (RSUs) to employees under our stock-based compensation plans. Stock options and RSUs vest in installments over the vesting period. Stock options generally vest 25% per year over a four-year period, and RSUs generally vest one-third per year over a three-year period. PSUs vest at the end of their respective terms, generally three years from the grant date, to the extent that specified performance conditions have been met.

Options are exercisable for subordinate voting shares. We recognize the grant date fair value of options granted to employees as compensation expense in our consolidated statement of operations, with a corresponding charge to contributed surplus on our consolidated balance sheet, over the vesting period. We adjust compensation expense to reflect the estimated number of options that we expect to vest at the end of the vesting period. When options are exercised, we credit the proceeds to capital stock on our consolidated balance sheet. We measure the fair value of options using the Black-Scholes option pricing model. Measurement inputs include the price of our subordinate voting shares on the grant date, the exercise price of the option, and our estimates of the following: expected price volatility of our subordinate voting shares (based on weighted average historic volatility), weighted average expected life of the option (based on historical experience and general option holder behavior), and the risk-free interest rate.

The cost we record for RSUs and 40% of PSUs granted annually is based on the market value of our subordinate voting shares at the time of grant. The cost we record for these PSUs, which vest based on a non-market performance condition related to the achievement of pre-determined financial targets over a specified period, is based on our estimate of the outcome of such performance condition. We adjust the cost of these PSUs as new facts and circumstances arise; the timing of these adjustments is subject to judgment. We generally record adjustments to the cost of these PSUs during the last year of the three-year term based on management's estimate of the expected level of achievement of such performance condition. We amortize the cost of RSUs and these PSUs to compensation expense in our consolidated statement of operations, with a corresponding charge to contributed surplus on our consolidated balance sheet, over the vesting period.

We determine the cost we record for 60% of PSUs granted annually using a Monte Carlo simulation model. The number of awards expected to vest is factored into the grant date Monte Carlo valuation for the award. The number of these PSUs that will vest depends on the level of achievement of total shareholder return (TSR), which is a market performance condition, relative to the TSR of a pre-defined group of companies over a three-year period. We do not adjust the grant date fair value regardless of the eventual number of awards that vest based on the level of achievement of the market performance condition. We recognize compensation expense in our consolidated statement of operations on a straight-line basis over the requisite service period and we reduce this expense for the estimated PSU awards that are not expected to vest because the employment conditions are not expected to be satisfied.

Business combinations:

We use the acquisition method to account for any business combinations. All identifiable assets and liabilities are recorded at fair value as of the acquisition date. Any goodwill that arises from business combinations is tested annually for impairment. Potential obligations for contingent consideration and contingencies are also recorded at fair value as of the acquisition date. We record subsequent changes in the fair value of such potential obligations from the date of acquisition to the settlement date in our consolidated statement of operations.

We use judgment to determine the estimates to value identifiable net assets and the fair value of contingent consideration, if applicable, at the acquisition date. We may engage independent third parties to determine the fair value of property, plant and equipment and intangible assets. We use estimates to determine cash flow projections, including the period of expected future benefit, and future growth and discount rates, among other factors.

Operating Results

Our annual and quarterly operating results, including our product and service volumes, revenues, and working capital performance, vary from period-to-period as a result of the level and timing of customer orders, mix of revenue, and fluctuations in materials and other costs and expenses. The level and timing of customer orders vary due to changes in demand for, and success in the marketplace of, their products, general economic conditions, their attempts to balance their inventory, availability of components and materials, and changes in their supply chain strategies or suppliers. Our annual and quarterly operating results are specifically affected by, among other factors: our mix of customers and the types of products or services we provide (as discussed below); the rate at which, the costs associated with, and the execution of, new program ramps; volumes and the seasonality of our business; price competition and other competitive factors; the mix of manufacturing or service value-add; capacity utilization; manufacturing efficiency; the degree of automation used in the assembly process; the availability of components or labor; the timing of receiving components and materials; costs and inefficiencies of transferring programs between sites; program completions or losses, or customer disengagements and the timing and the margin of any replacement business; the impact of foreign exchange fluctuations; the performance of third-party providers; our ability to manage inventory, production location and equipment effectively; our ability to manage changing labor, component, energy and transportation costs effectively; fluctuations in variable compensation costs; the timing of our expenditures in anticipation of forecasted sales levels; and the timing of any acquisitions and related integration costs. Our operations may also be affected by natural disasters or other local risks present in the jurisdictions in which we, our suppliers, logistics partners, and/or our customers operate. These events could lead to higher costs or supply shortages or may disrupt the delivery of components to us or our ability to provide finished products or services to our customers, any of which could adversely affect our operating results.

In the EMS industry, customers award new programs or shift programs to other EMS providers for a number of reasons, including changes in demand for the customers' products, pricing benefits offered by other EMS providers, execution or quality issues, preference for consolidation or a change in their supplier base, re-balancing the concentration or location of their EMS providers, consolidation among customers, and decisions to adjust the volume of business being outsourced. Customer or program transfers between EMS providers are part of the competitive nature of our industry. Some customers use more than one EMS provider to manufacture a product and/or may have the same EMS provider support them from more than one geographic location. Customers may choose to change the allocation of demand among their EMS providers and/or may shift programs from one region to another region within an EMS provider's global network. Customers may also decide to insource production they had previously outsourced to utilize their internal capacity or for other reasons. Our operating results for each period include the impacts associated with new program wins, follow-on business, program completions or losses, as well as any acquisitions. The volume, profitability and the location of new business awards vary from period-to-period and from program-to-program. Significant period-to-period variations can also result from the timing of new programs reaching full production or programs reaching end-of-life, the timing of follow-on or next generation programs and/or the timing of existing programs being fully or partially transferred internally or to a competitor.

Operating results expressed as a percentage of revenue:

	Year ended December 31		
	2015	2016	2017
Revenue	100.0%	100.0%	100.0%
Cost of sales	93.1%	92.9%	93.2%
Gross profit	6.9%	7.1%	6.8%
SG&A	3.7%	3.5%	3.3%
Research and development costs	0.4%	0.4%	0.4%
Amortization of intangible assets	0.2%	0.1%	0.1%
Other charges	0.6%	0.4%	0.6%
Finance costs, net of refund interest income	0.1%	—%	0.2%
Earnings before income tax	1.9%	2.7%	2.2%
Income tax expense	0.7%	0.4%	0.5%
Net earnings	1.2%	2.3%	1.7%

Revenue:

Revenue of $6.1 billion for 2017 increased 2% compared to 2016. Compared to revenue from our end markets in 2016, revenue dollars from our Communications end market increased 4% in 2017, and revenue dollars from our ATS and Enterprise end markets were relatively flat in 2017, due to the factors discussed in "Summary of 2017" above and the discussions below.

Revenue of $6.0 billion for 2016 increased 7% compared to 2015. Compared to revenue from our end markets in 2015, revenue dollars from our Communications end market increased 12% in 2016, revenue dollars from our ATS end market increased 8% in 2016, and revenue dollars from our Enterprise end market decreased 3% in 2016, due to the factors discussed in "Summary of 2016" above and the discussions below.

The following table sets forth revenue from our end markets as a percentage of our total revenue for the periods indicated:

	2015	2016	2017
ATS	32%	32%	32%
Communications	40%	42%	43%
Enterprise	28%	26%	25%
Revenue (in billions)	$ 5.64	$ 6.02	$ 6.11

Due to the converging technologies of our storage and servers businesses, we combined them into a single "Enterprise" end market for reporting purposes, commencing with the quarter ended March 31, 2017. In addition, due to the decreasing size of our Consumer end market, we added it to our former Diversified end market to create our ATS end market for reporting purposes, commencing with the quarter ended March 31, 2017. All period percentages reflect these changes. See "Recent developments" above.

Our product and service volumes, revenue and operating results vary from period-to-period depending on various factors, including the success in the marketplace of our customers' products, changes in demand from our customers for the products we manufacture, the mix and complexity of the products or services we provide, the timing of receiving components and materials, the extent, timing and rate of new program wins, follow-on business, program completions or losses, the transfer of programs among our sites at our customers' request, the costs, terms, timing and execution of new program ramps, and the impact of seasonality on various end markets. We are dependent on a limited number of customers for a substantial portion of our revenue. We also expect that the pace of technological change, the frequency of customers' transferring business among EMS competitors or customers changing the volumes they outsource, and the dynamics of the global economy will continue to impact our business from period-to-period. See "Overview" above.

From time to time, we experience some level of seasonality in our quarterly revenue patterns across some of our businesses. However, the numerous factors described above that affect our period-to-period results make it difficult to isolate the impact of seasonality and other external factors on our business. In the past, revenue from the storage component of our Enterprise end market has increased in the fourth quarter of the year compared to the third quarter, and then decreased in the first quarter of the following year, reflecting the increase in customer demand we typically experience in this business in the fourth quarter. In addition, we typically experience our lowest overall revenue levels during the first quarter of each year. There is no assurance that these patterns will continue.

Our ATS end market represented 32% of total revenue for each of 2017, 2016 and 2015. Revenue dollars from our ATS end market for 2017 were relatively flat in 2017 compared to 2016, as growth in our semiconductor business and from new programs were offset by a 7% decrease in revenue due to our exit from the solar panel manufacturing business, and a decrease in revenue due to the completion of programs with one of our then-largest consumer customers during the third quarter of 2016. ATS revenue for 2017 benefited from a new “operate-in-place” program outsourced to us from one our aerospace and defense customers in September 2017, as well as our Karel acquisition completed in November 2016. Despite revenue dollars and revenue concentration (32%) for 2017 being relatively flat compared to 2016, revenue concentration from our ATS end market increased to 33% of total revenue for the fourth quarter of 2017, compared to 29% for the fourth quarter of 2016 and 31% for the third quarter of 2017. We currently expect revenue from our ATS end market to continue to grow in future periods from organic growth, as well as from acquisition activities (however, there can be no assurance that any acquisitions will occur in a timely manner, or at all). Revenue dollars from our ATS end market for 2016 increased 8% compared to 2015, primarily due to new program ramps in our smart energy business, including new solar programs prior to our exit from that business, and a new “operate-in-place” program outsourced to us from an aerospace and defense customer in April 2015.

Our Communications end market represented 43% of total revenue for 2017, compared to 42% for 2016 and 40% for 2015. Revenue dollars from this end market in 2017 increased 4% compared to 2016, primarily due to demand strength in certain programs and new program growth (including with respect to our fulfillment services and JDM programs). Although Communications revenue increased compared to 2016, we experienced slower growth rates (particularly in the second half of 2017), compared to the prior year primarily due to new programs from 2016 reaching their full production levels, and increased pricing pressures and late changes in demand from certain customers in 2017. We expect adverse pricing pressures to continue in future periods in this end market (see “Recent developments — End markets” above). Revenue dollars from this end market in 2016 increased 12% compared to 2015, primarily driven by demand strength from certain customer programs and new program wins.

Our Enterprise end market represented 25% of total revenue for 2017, 26% for 2016 and 28% for 2015. In 2017, revenue dollars from our Enterprise end market were relatively flat compared to 2016, as growth from new programs primarily in the first half of 2017 was offset by softer demand in the second half of 2017. We also expect adverse pricing pressures to continue in future periods in this end market (see “Recent developments — End markets” above). Revenue dollars from this end market in 2016 decreased 3% compared to 2015, due primarily to customer demand softness.

Although we supply products and services to over 100 customers, we depend upon a small number of customers for a substantial portion of our revenue. In the aggregate, our top 10 customers represented 71% of total revenue for 2017 (2016 — 68%; 2015 — 67%). For 2017, we had two customers that individually represented more than 10% of total revenue (2016 — two customers; 2015 — three customers). Cisco Systems and Juniper Networks accounted for 18% and 13%, respectively, of our total revenue for 2017 (2016 — Cisco Systems (19%) and Juniper Networks (11%); 2015 — Cisco Systems (16%), IBM (10%) and Juniper Networks (12%)). Whether any of our customers individually accounts for more than 10% of our total revenue in any period depends on various factors affecting our business with that customer and with other customers, including overall changes in demand for our customers' products, the extent and timing of new program wins, follow-on business, program completions or losses, the phasing in or out of programs, the relative growth rate or decline of our business with our various customers, price competition and changes in our customers' supplier base or supply chain strategies, and the impact of seasonality on our business.

We are dependent to a significant degree upon continued revenue from our largest customers. We generally enter into master supply agreements with our customers that provide the framework for our overall relationship. These agreements typically do not guarantee a particular level of business or fixed pricing. Instead, we bid on a program-by-program basis and typically receive customer purchase orders for specific quantities and timing of products. There can be no assurance that revenue from any of our major customers will continue at historical levels or will not decrease in absolute terms or as a percentage of total revenue. A significant revenue decrease or pricing pressures from these or other customers, or a loss of a major customer or program, could have a material adverse impact on our business, our operating results and our financial position. Changes in the types of product or services we provide to our customers in a particular period may also adversely impact our margins and operating results for such period. For example, providing a relatively higher concentration of fulfillment services (which occurred in 2017 as compared to prior years, and is expected to continue) negatively impacts our operating results, as our fulfillment services generally have significantly lower margins than our traditional value-added services. Some of our customer agreements require us to provide specific price reductions to our customers over the term of the contracts. Our margins and operating results will be negatively impacted to the extent we cannot compensate for such reductions. In addition, as longer-term contracts are becoming more prevalent, we anticipate that these adverse effects will increasingly impact our business in future periods.

In the EMS industry, customers may cancel contracts and volume levels can be changed or delayed. Customers may also shift business to a competitor or bring programs in-house to improve their own utilization or to adjust the concentration of their supplier base to manage supply continuity risk. We cannot assure the replacement of completed, delayed, cancelled or reduced orders with new business. In addition, we cannot assure that any of our current customers will continue to utilize our services. Changes in demand (which occurred during 2017 with respect to particular customers), order cancellations, and changes or delays in production could have a material adverse impact on our results of operations and working capital performance, including requiring us to carry higher than expected levels of inventory. Material constraints (which also occurred during 2017) and supplier quality issues can also cause delays in production and could have a material adverse impact on our operations and our inventory levels. Order cancellations and delays could also lower our asset utilization, resulting in lower margins. Significant period-to-period changes in margins can also result if new program wins or follow-on business are more competitively priced than past programs. In addition, customers from time to time shift programs to us from other service providers, including some for lower complexity, light touch programs that are aggressively priced, which can adversely impact future operating results.

Gross profit:

The following table shows gross profit and gross margin (gross profit as a percentage of total revenue) for the periods indicated:

	Year ended December 31		
	2015	**2016**	**2017**
Gross profit (in millions)	$ 391.1	$ 427.6	$ 417.8
Gross margin	6.9%	7.1%	6.8%

Gross profit for 2017 decreased 2% compared to 2016. Gross profit and gross margin for 2017 were negatively impacted by unfavorable changes in program mix, increased pricing pressures and higher ramping costs, offset in part by margin improvements in our ATS end market. During 2017, our Communications and Enterprise end markets faced increased pricing pressures (see “Recent developments — End markets” above), and were also negatively impacted by a higher concentration than in 2016 of new programs, including fulfillment services, that contributed significantly lower gross profit than our historical full-service traditional EMS programs. We also incurred additional ramping costs with respect to new programs, including aerospace and defense programs, as well as programs that required the establishment of infrastructures in multiple jurisdictions. Gross profit and gross margin for our ATS end market in 2017 increased compared to the prior year, as a result of increases in each of our semiconductor and former solar businesses (the latter as a result of lower provisions recorded in 2017), offset in part by the completion of consumer programs which benefited gross margin in 2016. The gross margin for our former solar business was negatively impacted in 2016 by higher provisions (accounting for 15 basis points in 2016), primarily to write-down the carrying value of our solar panel inventory to then-recoverable amounts).

Gross profit for 2016 increased 9% compared to 2015, primarily driven by higher revenue levels in 2016 and margin improvements in our ATS end market, including in our semiconductor business and our then-solar business, partially offset by changes in program mix as some of our 2016 programs contributed lower gross profit than earlier programs. Our solar margins for 2016 improved compared to 2015 despite the higher provisions recorded in 2016 (accounting for approximately 15 basis points), primarily to write down the value of our solar panel inventory in the second half of 2016 to then-current market prices. Additionally, we made margin improvements in our semiconductor business during 2016 as compared to the prior year reflecting improvements in productivity and the restructuring actions we implemented in 2015.

In general, multiple factors cause gross margin to fluctuate including, among others: volume and mix of products or services; higher/lower revenue concentration in lower gross margin products and end markets; pricing pressures; contract terms and conditions; production efficiencies; utilization of manufacturing capacity; changing material and labor costs, including variable labor costs associated with direct manufacturing employees; manufacturing and transportation costs; start-up and ramp-up activities; new product introductions; disruption in production at individual sites, including as a result of program transfers; cost structures at individual sites; foreign exchange volatility; and the availability of components and materials.

Our gross profit and SG&A (discussed below) are also impacted by the level of variable compensation expense we record in each period. Variable compensation expense includes expense related to awards under our team incentive plans, our sales incentive plans, and our stock-based compensation plans, including stock options, PSUs and RSUs. See "Stock-based compensation" below. The amount of variable compensation expense related to performance-based compensation varies each period depending on the level of achievement of pre-determined performance goals and financial targets.

Selling, general and administrative expenses:

SG&A for 2017 of $203.2 million (3.3% of total revenue) decreased $7.9 million compared to $211.1 million (3.5% of total revenue) for 2016, primarily due to $2.5 million of lower foreign exchange losses, $2.5 million of lower stock-based compensation expense in 2017 (discussed below), and lower variable expenses, including costs associated with our OD initiative incurred in 2017 compared to 2016. As part of the wind down of our solar panel business, we recorded a provision of $0.5 million in SG&A expenses during the second quarter of 2017 to write down our solar accounts receivable, primarily as a result of a solar customer's bankruptcy.

SG&A for 2016 of $211.1 million (3.5% of total revenue) increased compared to $207.5 million (3.7% of total revenue) for 2015, primarily due to higher foreign exchange losses and costs associated with our OD initiative, offset in part by $3.3 million lower stock-based compensation expense in 2016 (discussed below). The decrease in SG&A as a percentage of revenue for 2016 compared to 2015 reflects the higher revenue levels in 2016.

Stock-based compensation:

Our employee stock-based compensation expense, which excludes DSU expense, varies each period. The portion of our expense that relates to performance-based compensation generally varies depending on our level of achievement of pre-determined performance goals and financial targets. In 2017, we recorded employee stock-based compensation expense of $14.6 million (2016 — $15.0 million; 2015 —$16.3 million) in cost of sales and $15.5 million (2016 — $18.0 million; 2015 — $21.3 million) in SG&A.

The following table shows employee stock-based compensation for the periods indicated:

	Year ended December 31		
	2015	2016	2017
Employee stock-based compensation (in millions)	$ 37.6	$ 33.0	$ 30.1

Compared to 2016, our employee stock-based compensation expense for 2017 decreased by $2.9 million (predominately through SG&A), primarily due to lower adjustments recorded in 2017 to reflect the reduced level of achievement related to our performance based compensation. In addition, the increase in forfeited awards during 2017 decreased our stock-based compensation by a further $2.4 million in 2017, which offset a $2.0 million increase in the accelerated recognition of stock-based compensation expense for employees eligible for retirement in 2017.

Compared to 2015, our employee stock-based compensation expense for 2016 decreased by $4.6 million, primarily due to lower amounts recorded in 2016 in connection with the accelerated recognition of stock-based compensation expense for employees eligible for retirement.

Management currently intends to settle all outstanding RSUs and PSUs with subordinate voting shares purchased in the open market by a broker or by issuing subordinate voting shares from treasury. Accordingly, we have accounted for these share unit awards as equity-settled awards. See "Cash requirements" below.

In 2017, we recorded DSU expense of $2.2 million (2016 — $2.1 million; 2015 — $1.9 million) through SG&A. During 2017, we paid $1.7 million in cash to a director that resigned in July 2017 to settle his outstanding DSUs, and we settled the outstanding DSUs of a director that resigned in November 2017 with 14,098 subordinate voting shares that we purchased in the open market, in each case in accordance with the provisions of the Directors' Share Compensation Plan.

Other charges:

(i) Restructuring charges:

We have recorded the following restructuring charges for the periods indicated (in millions):

	Year ended December 31		
	2015	2016	2017
Restructuring charges	$ 23.9	$ 31.9	$ 28.9

We perform ongoing evaluations of our business, operational efficiency and cost structure, and implement restructuring actions as we deem necessary. We recorded aggregate restructuring charges of $28.9 million in 2017, consisting of cash charges of $25.1 million, comprised of employee termination costs resulting from our OD and GBS initiatives, costs in connection with the rationalization of certain operations in the third quarter of 2017, and $8.0 million of charges in connection with our new cost efficiency initiative (described below) in the fourth quarter of 2017, as well as net non-cash impairment charges of $3.8 million to write down the carrying value of our solar panel manufacturing equipment to its fair value less costs to sell (we recorded non-cash charges of $5.2 million to write down the carrying value of such equipment in the second quarter of 2017 based on then-broker estimates, and recorded reversals to such charges of $1.4 million in the fourth quarter of 2017 based on executed sale agreements). Our restructuring provision at December 31, 2017 was $12.7 million, comprised primarily of employee termination costs which we currently expect to pay in 2018. All cash outlays have been, and the balance is expected to be, funded with cash on hand.

Our aggregate restructuring charges of $31.9 million for 2016 consisted of cash charges of $10.7 million, primarily for employee termination costs relating to our GBS and OD initiatives, our solar panel manufacturing operations and other exited operations, and non-cash charges of $21.2 million, to write down certain plant assets and equipment to recoverable amounts, including $19.0 million related to our solar panel manufacturing equipment at our two locations. Our restructuring provision at December 31, 2016 was $6.6 million, comprised primarily of employee termination costs, which were all paid with cash on hand.

Our aggregate restructuring charges of $23.9 million for 2015 consisted of cash charges of $19.5 million, primarily for employee termination costs at various sites, including headcount reductions in certain under-utilized manufacturing sites in higher cost locations, and non-cash charges of $4.4 million, primarily to write down certain equipment to recoverable amounts. These 2015 charges also included costs associated with the consolidation of two of our semiconductor sites in the second quarter of 2015, to reduce the cost structure and improve the margin performance of that business. Our restructuring provision at December 31, 2015 was $10.7 million, comprised primarily of employee termination costs, which were all paid with cash on hand.

In response to challenging markets and continued margin pressures, we announced in October 2017 our intention to implement additional restructuring actions in the near term to further streamline our business and improve our margin performance, and our related engagement of an outside consultant to identify cost reduction opportunities throughout our network, including through increased operational efficiencies and productivity improvements. In connection therewith, we have commenced the implementation of additional restructuring actions under a new cost efficiency initiative. Such initiative will include reductions to our workforce, the potential consolidation of certain sites to better align capacity and infrastructure with current and anticipated customer demand, related transfers of customer programs and production, re-alignment of business processes, management reorganizations, and other associated activities. We currently estimate that we will incur aggregate restructuring charges of between $50.0 million and $75.0 million, which will consist primarily of cash charges, with respect to our cost efficiency initiative, including $8.0 million of the $14.6 million in cash restructuring charges that we recorded in the fourth quarter of 2017. We currently expect the restructuring charges under this initiative to continue through mid-2019.

We may also propose additional future restructuring actions or divestitures as a result of changes in our business, the marketplace and/or our exit from less profitable, under-performing, non-core or non-strategic operations. In addition, an increase in the frequency of customers transferring business to our EMS competitors, changes in the volumes they outsource, pricing pressures, or requests to transfer their programs among our sites or to lower-cost locations, may also result in our taking future restructuring actions. We may incur higher operating expenses during periods of transitioning programs within our network or to our competitors. Any such restructuring activities, if undertaken at all, could adversely impact our operating and financial results, and may require us to further adjust our operations.

(ii) Asset impairment:

We have recorded the following asset impairment charges for the periods indicated (in millions):

	Year ended December 31		
	2015	2016	2017
Asset impairment	$ 12.2	$ —	$ —

We conduct our annual impairment assessment of goodwill, intangible assets and property, plant and equipment (Annual Impairment Assessment) in the fourth quarter of each year (which corresponds to our annual planning cycle), and whenever events or changes in circumstances indicate that the carrying amount of an asset, CGU or a group of CGUs may not be recoverable (triggering events). We recognize an impairment loss when the carrying amount of an asset, CGU or a group of CGUs exceeds its recoverable amount, which is measured as the greater of its expected value-in-use and its fair value less costs to sell. We did not identify any triggering event during the course of 2017 indicating that the carrying amount of our assets or CGUs may not be recoverable, other than with respect to our exit from the solar panel manufacturing business. In connection therewith, we recorded net impairment losses (through restructuring charges) of $3.8 million on our solar panel manufacturing equipment in 2017, to reduce the carrying value of such equipment to its estimated fair value less costs to sell based on executed sale agreements.

In the fourth quarter of 2017, we performed our Annual Impairment Assessment and determined that there was no additional impairment as the recoverable amount of our assets and CGUs exceeded their respective carrying values as of December 31, 2017.

For our Annual Impairment Assessments, other than with respect to our solar panel manufacturing equipment in 2016 and 2017 (which were based on estimated fair value less costs to sell), we used cash flow projections based primarily on our plan for the following year and, to a lesser extent, on our three-year strategic plan and other financial projections. Our plans are primarily based on financial projections submitted by our subsidiaries in the fourth quarter of each year, together with inputs from our customer teams, and is subjected to in-depth reviews performed by various levels of management as part of our annual planning cycle. The plan for 2018 (used for our 2017 Annual Impairment Assessment) was approved by management and presented to our Board of Directors in December 2017.

In the fourth quarter of 2016, we performed our Annual Impairment Assessment and determined that, other than the write down of our solar panel manufacturing equipment (recorded through restructuring charges and described in clause (i) above), there was no impairment as the recoverable amount of our assets and CGUs exceeded their respective carrying values as of December 31, 2016.

In the fourth quarter of 2015, we performed our Annual Impairment Assessment, and in connection therewith, recorded non-cash impairment charges totaling $12.2 million, comprised of $6.5 million and $5.7 million, against the property, plant and equipment of our CGUs in Japan and Spain, respectively. Such charges were primarily due to the reduction of our then-long-term cash flow projections for these CGUs as a result of reduced customer demand and challenging market conditions that we were experiencing in these CGUs at that time, and our assessment of the continued negative impact of these factors on the future profitability of these two CGUs. After recording the 2015 impairment charges, the carrying value of the property, plant and equipment held by each such CGU was reduced to approximate the fair value of its real property at the end of 2015.

The recoverable amount of a CGU is the greater of its expected value-in-use and its fair value less costs to sell. The process of determining the recoverable amount of a CGU is subjective and requires management to exercise significant judgment in estimating future growth, profitability, and discount and terminal growth rates, among other factors. The assumptions used in our 2017 Annual Impairment Assessment were determined based on past experiences adjusted for expected changes in future conditions. Where applicable, we engaged independent brokers to obtain market prices to estimate our real property and other asset values. For our 2017 assessment (where cash flow projections were used), we used cash flow projections ranging from 4 to 6 years (2016 — 1 to 7 years; 2015 — 3 to 10 years) for our CGUs, in line with the remaining useful lives of the CGUs' essential assets. Additionally, in order to estimate the cash flows beyond our most recent cash flow projection period used, we applied a perpetuity growth rate of 2%, which is consistent with long-term inflation guidance. We generally used our weighted-average cost of capital of approximately 9% (2016 — approximately 10%; 2015 — approximately 8%) to discount our cash flows. For our semiconductor CGU, however, we applied a discount rate of 17% to our cash flow projections for this CGU in 2015 through 2017 reflecting the higher risk inherent in these cash flows, notwithstanding the recent positive performance of this CGU.

As part of our annual impairment assessment of goodwill, we also perform sensitivity analysis for the relevant CGUs in order to identify the impact of changes in key assumptions, including projected growth rates, profitability, and discount and terminal growth rates. Our goodwill balance at December 31, 2017 of $23.2 million was comprised of $19.5 million attributable to our semiconductor CGU and $3.7 million attributable to our Karel acquisition. For purposes of our 2017 impairment assessment of our semiconductor CGU, we assumed future revenue growth at an average compound annual growth rate of 9% over a 6-year period (2016 — 7% over a 7-year period; 2015 — 9% over an 8-year period), representing the remaining life of the CGU's most significant customer contract. We believe that this growth rate is supported by the level of new business awarded in recent years and the expectation of future new business awards. We also assumed that the average annual margins for this CGU over the projection period will be slightly above our overall margin performance for 2017, consistent with the average annual margins we assumed for our 2016 impairment analysis. For our 2017 Annual Impairment Assessment, we did not identify any key assumptions where a reasonable possible change would result in material impairments to our semiconductor CGU. For purposes of our 2017 impairment assessment of our Karel goodwill, we assumed modest revenue growth over a 4-year period, and average margins over the projection period equal to our overall margin performance for 2017. We did not identify any key assumptions where a reasonable possible change would result in material impairments related to the goodwill attributable to our acquisition of Karel.

Impairment assessments inherently involve judgment as to assumptions about expected future cash flows and the impact of market conditions on those assumptions. Future events and changing market conditions may impact our assumptions as to prices, costs or other factors that may result in changes in our estimates of future cash flows. Failure to realize the assumed revenues at an appropriate profit margin of a CGU could result in impairment losses in such CGU in future periods.

(iii) Loss on pension annuity purchases:

In March 2017, the Trustees of our U.K. Main pension plan entered into an agreement with a third party insurance company to purchase an annuity for participants of the Main plan who have retired. The purchase of the annuity resulted in a non-cash loss of $17.0 million which we recorded in other comprehensive income and simultaneously re-classified to deficit during 2017, with a corresponding reduction in the value of our pension assets which is recorded in other non-current assets on our consolidated balance sheet. See note 19(a) of our 2017 audited consolidated financial statements.

In April 2017, the Trustees of our U.K. Supplementary pension plan entered into an agreement with a third party insurance company to purchase an annuity for all participants of this plan. The purchase of the annuity resulted in a non-cash loss of $1.9 million which we recorded during 2017 in other charges in our consolidated statement of operations, with a corresponding reduction in the value of our pension assets which is recorded in other non-current assets on our consolidated balance sheet. This non-cash loss is recorded through our consolidated statement of operations as we anticipate transferring the pension annuity to individual plan members and winding up the plan in 2018. See note 19(a) of our 2017 audited consolidated financial statements.

(iv) Toronto transition costs:

In connection with the anticipated sale of our Toronto real property, we entered into a long-term lease in November 2017 (in the Greater Toronto area) for the relocation of our Toronto manufacturing operations, with occupancy anticipated to commence at the end of the first quarter of 2018. We currently expect to complete the transition to this new manufacturing location by the end of the first quarter of 2019. In addition, should the sale be consummated, we will enter into a short-term interim lease with the purchasers of our Toronto real property for our existing corporate headquarters and manufacturing premises on a portion of the real estate on a rent-free basis (subject to certain payments, including taxes and utilities), followed by a long-term lease with such purchasers for our new corporate headquarters. In connection therewith, we intend to move such headquarters to a temporary location while space in a new office building (to be built by such purchasers on the site of our current location) is under construction. The temporary office relocation is currently expected to occur by the end of the first quarter of 2019. We will incur significant costs throughout the transition period (which commenced in the fourth quarter of 2017) to relocate our corporate headquarters and to transfer our Toronto manufacturing operations to its new location, and as we prepare and customize the new site to meet our manufacturing needs. These costs will consist of building improvements and new equipment which we will capitalize, as well as transition-related costs which we will record in other charges. Transition costs are comprised of direct relocation costs, duplicate costs (such as rent expense, utility costs, depreciation charges, and personnel costs) incurred during the transition period, as well as cease-use costs incurred in connection with idle or vacated portions of the relevant premises that we would not have incurred but for these relocations. Any amounts received from the purchasers of our Toronto real property, or gains recorded in connection with its sale, will be recorded as recoveries through other charges (recoveries). In the fourth quarter of 2017, we recorded $1.6 million of such transition costs, consisting of utility costs related to idle premises, depreciation charges and personnel costs used in the operation of duplicate production lines in advance of the transition.

(v) Other:

In 2017, we recorded $4.5 million for consulting, transaction and integration costs related to potential and completed acquisitions (Acquisition Costs).

In 2016, we recorded $1.4 million of Acquisition Costs pertaining to our acquisition of Karel (2015 — nil), and received recoveries of damages (Damage Recoveries) of $12.0 million in connection with the settlement of class action lawsuits in which we were a plaintiff, related to certain purchases we made in prior periods (2015 — nil). The Damage Recoveries in 2016 were offset in part by the cost to settle an unrelated legal matter.

Refund interest income:

In 2016, we received refund interest income totaling $14.3 million in connection with the resolution of certain previously disputed tax matters. See “Income taxes” below.

Income taxes:

For 2017, we had a net income tax expense of $27.4 million on earnings before tax of $132.4 million, compared to a net income tax expense of $24.7 million on earnings before tax of $161.0 million for 2016 and a net income tax expense of $42.2 million on earnings before tax of $109.1 million for 2015.

Our net income tax expense for 2017 of $27.4 million was favorably impacted by the recognition of a deferred income tax benefit of $4.3 million (Solar Benefit) related to our solar assets (discussed below), which was largely offset by deferred income tax expense related to taxable temporary differences associated with the anticipated repatriation of undistributed earnings from certain of our Chinese subsidiaries, and a $2.0 million deferred income tax expense related to recently enacted U.S. Tax Reform (discussed below). In connection with our exit from the solar panel manufacturing business, we withdrew one of our tax incentives in Thailand (which related solely to such operations) during the second quarter of 2017. The withdrawal of this incentive allows us to apply future tax losses arising from the ultimate disposition of our solar assets against other fully taxable profits in Thailand, resulting in the recognition of the $4.3 million Solar Benefit. The Solar Benefit was reduced (from $5.0 million as disclosed in the second quarter of 2017) based on adjustments to the impairment charges we recorded for our solar assets throughout 2017. Our net income tax expense for 2017 was also favorably impacted by taxable foreign exchange benefits resulting from the strengthening of the Malaysian ringgit and Chinese renminbi relative to the U.S. dollar. Our functional and reporting currency is the U.S. dollar; however, our income tax expense is based primarily on taxable income determined in the currency of the country of origin. As a result, foreign currency translation differences impact our income tax expense from period to period.

The U.S. Tax Reform was enacted on December 22, 2017 and became effective January 1, 2018. Although the legislative changes contained in the U.S. Tax Reform are extensive and the interpretation of several aspects of such U.S. Tax Reform is still unclear, we recorded an income tax expense for all significant known and determinable impacts during the fourth quarter of 2017. In connection with the reduction in U.S. federal corporate tax rates from 35% to 21%, we recorded a one-time, non-cash increase to our deferred income tax expense of $2.0 million, or $0.01 per diluted share, to re-value our recognized net deferred tax assets. We believe we have recorded all significant one-time impacts resulting from the U.S. Tax Reform in the fourth quarter of 2017, but will continue to assess additional impacts, if any, throughout 2018 as they become known due to changes in our interpretations and assumptions, as well as additional regulatory guidance that may be issued. See “Critical Accounting Policies and Estimates” above.

Our net income tax expense for 2016 of $24.7 million was favorably impacted by a reversal of provisions previously recorded for tax uncertainties related to the final reassessments and settlement of tax accounts in connection with the resolution of a transfer pricing matter for one of our Canadian subsidiaries. In connection therewith, we recorded aggregate income tax recoveries of $45 million Canadian dollars (approximately $34 million at the exchange rates at the time of recording), as well as aggregate refund interest income of $14.3 million. Our net income tax expense for 2016 was negatively impacted by withholding taxes of $1.5 million pertaining to the repatriation of $50.0 million from a U.S. subsidiary, deferred income tax expense of $8.0 million related to taxable temporary differences associated with the then-anticipated repatriation of undistributed earnings from certain of our Chinese subsidiaries, as well as taxable foreign exchange impacts of $7.3 million resulting from the weakening of the Malaysian ringgit and Chinese renminbi relative to the U.S. dollar (Currency Tax Expense). There was no tax impact recorded in 2016 associated with the $21.2 million non-cash impairment charges (recorded through restructuring), however, as discussed above, we recorded the Solar Benefit of $4.3 million in 2017.

Our net income tax expense for 2015 of $42.2 million was negatively impacted by a Currency Tax Expense of $12.2 million. There was no net tax impact associated with the $12.2 million non-cash impairment charge we recorded in 2015.

We conduct business operations in a number of countries, including countries where tax incentives have been extended to encourage foreign investment or where income tax rates are low. Our effective tax rate can vary significantly from period to period for various reasons, including as a result of the mix and volume of business in various tax jurisdictions, and in jurisdictions with tax holidays and tax incentives that have been negotiated with the respective tax authorities (see discussion below). Our effective tax rate can also vary as a result of restructuring charges, foreign exchange fluctuations, operating losses, cash repatriations, certain tax exposures, the time period in which losses may be used under tax laws and whether management believes it is probable that future taxable profit will be available to allow us to recognize deferred income tax assets.

Certain countries in which we do business grant tax incentives to attract and retain our business. Our tax expense could increase significantly if certain tax incentives from which we benefit are retracted. A retraction could occur if we fail to satisfy the conditions on which these tax incentives are based, or if they are not renewed or replaced upon expiration. Our tax expense could also increase if tax rates applicable to us in such jurisdictions are otherwise increased, or due to changes in legislation or administrative practices. Changes in our outlook in any particular country could impact our ability to meet the required conditions.

We continue to negotiate Malaysian income tax incentives for one of our Malaysian subsidiaries, and expect to be granted new pioneer incentives for only limited portions of our Malaysian business. Since the expiry of our previous incentives at the end of 2014, we have been recording Malaysian income taxes at full statutory tax rates. As these negotiations are ongoing, including the activities covered, exemption levels, incentive conditions or commitments, and the effective commencement date of the incentive, we are currently unable to quantify the benefits or applicable periods of any such incentives, and there can be no assurance that any such incentives will be granted.

We have multiple income tax incentives in Thailand with varying exemption periods. These incentives initially allow for a 100% income tax exemption (including distribution taxes), which after eight years transition to a 50% income tax exemption for the next five years (excluding distribution taxes). Upon full expiry of each of the incentives, taxable profits associated with such expired tax incentives become fully taxable. As a result of our exit from the solar panel manufacturing business, we withdrew our tax incentive related to our solar panel manufacturing operations in Thailand during the second quarter of 2017. Two of our remaining three Thailand tax incentives expire between 2019 and 2020, while the third incentive will transition to the 50% exemption in 2022, and expire in 2027. The withdrawal of the solar-related tax incentive in Thailand resulted in recognition in 2017 of the $4.3 million Solar Benefit, as such withdrawal allows future tax losses arising from the ultimate disposition of our solar assets to be applied against other fully taxable profits in Thailand.

In certain jurisdictions, primarily in the Americas and Europe, we currently have significant net operating losses and other deductible temporary differences, which we expect will be used to reduce taxable income in these jurisdictions in future periods, although not all are currently recognized as deferred tax assets.

We develop our tax filing positions based upon the anticipated nature and structure of our business and the tax laws, administrative practices and judicial decisions currently in effect in the jurisdictions in which we have assets or conduct business, all of which are subject to change or differing interpretations, possibly with retroactive effect. We are subject to tax audits of historical information by tax authorities in various jurisdictions which could result in additional tax expense in future periods relating to prior results. Reviews by tax authorities generally focus on, but are not limited to, the validity of our inter-company transactions, including financing and transfer pricing policies which generally involve subjective areas of taxation and a significant degree of judgment. Any such increase in our income tax expense and related interest and/or penalties could have a significant adverse impact on our future earnings and future cash flows.

Certain of our subsidiaries provide financing, or products and services to, and may from time-to-time undertake certain significant transactions with other subsidiaries in different jurisdictions. Moreover, several jurisdictions in which we operate have tax laws with detailed transfer pricing rules which require that all transactions with non-resident related parties be priced using arm's-length pricing principles, and that contemporaneous documentation must exist to support such pricing.

As previously disclosed, Canadian tax authorities withdrew their position related to certain transfer pricing matters involving one of our Canadian subsidiaries and reversed their adjustments for the years 2001 through 2004. In connection therewith, in the second half of 2016, we recorded aggregate current income tax recoveries of $45 million Canadian dollars (approximately $34 million at the exchange rates at the time of recording) to reverse previously recorded provisions for tax uncertainties related to transfer pricing, as well as aggregate refund interest income of $19 million Canadian dollars ($14.3 million at the exchange rates at the time of recording) for cash held on account with the tax authorities in connection with such matters. Canadian tax authorities had also taken an unfavorable position relating to the deductibility of certain Canadian interest amounts, which we successfully appealed. The Canadian tax authorities issued revised reassessments and the matter was closed in the fourth quarter of 2016. As a result of the resolution of the above tax matters, we received $70 million Canadian dollars (approximately $52 million at settlement date exchange rates) during the fourth quarter of 2016, representing the refund of cash previously deposited on account with the Canadian tax authorities and related refund interest income, and $6 million Canadian dollars (approximately $4 million at settlement date exchange rates) in January 2017. The aggregate amount of cash refunds received represented the return of all deposits and related refund interest in respect of the Canadian tax matters.

In 2015, we de-recognized the future benefit of certain Brazilian tax losses, which were previously recognized on the basis that these tax losses could be fully utilized to offset unrealized foreign exchange gains on inter-company debts that would become realized in the fiscal period ending on the date of dissolution of our Brazilian subsidiary. Due to the weakening of the Brazilian real against the U.S. dollar, the unrealized foreign exchange gains had diminished to the point where the tax cost to settle such inter-company debt was significantly reduced. Accordingly, our Brazilian inter-company debts were settled on April 7, 2015 triggering a tax liability of $1 million and the relevant tax costs related to the foreign exchange gains were accrued as at December 31, 2015.

The successful pursuit of assertions made by any taxing authority could result in our owing significant amounts of tax, interest and possibly penalties. We believe we adequately accrue for any probable potential adverse tax ruling. However, there can be no assurance as to the final resolution of any claims and any resulting proceedings. If any claims and any ensuing proceedings are determined adversely to us, the amounts we may be required to pay could be material, and could be in excess of amounts accrued.

Acquisitions:

In November 2016, we acquired the business assets of Karel for a cash purchase price of $14.9 million (see "Summary of 2016" above). In January 2018, we entered into a definitive agreement to acquire U.S.-based Atrenne (see "Overview — Recent developments" above). There can be no assurance that the Atrenne acquisition will be completed in a timely manner, or at all.

We may, at any time, be engaged in ongoing discussions with respect to possible acquisitions that could expand our revenue base and/or service offerings, increase our penetration in various industries, establish strategic relationships with new or existing customers, enhance our competitiveness, and/or enhance our global supply chain network. There can be no assurance that any of these discussions will result in a definitive purchase agreement and, if they do, what the terms or timing of any such agreement would be. There can also be no assurance that any acquisition will be successfully integrated or will generate the returns we expect.

We may fund acquisitions from cash on hand, third-party borrowings, the issuance of securities, or a combination thereof.

Liquidity and Capital Resources

Liquidity

The following tables set forth key liquidity metrics for the periods indicated (in millions):

	December 31		
	2015	2016	2017
Cash and cash equivalents	$ 545.3	$ 557.2	$ 515.2
Borrowings under credit facility	262.5	227.5	187.5

	Year end December 31		
	2015	2016	2017
Cash provided by operating activities	$ 196.3	$ 173.3	$ 127.0
Cash used in investing activities	(75.3)	(64.0)	(89.3)
Cash used in financing activities	(140.7)	(97.4)	(79.7)
Changes in non-cash working capital items (included in operating activities above):			
A/R	$ 12.5	$ (104.6)	$ 25.7
Inventories	(75.6)	(89.5)	(171.2)
Other current assets	38.2	(5.3)	(2.0)
A/P, accrued and other current liabilities and provisions	28.8	75.4	52.1
Working capital changes	$ 3.9	$ (124.0)	$ (95.4)

Cash provided by operating activities:

In 2017, we generated $127.0 million of cash from operating activities compared to $173.3 million in 2016. The decrease in cash provided by operating activities as compared to 2016 was primarily due to the income tax refund of $52 million related to the resolution of certain tax matters we received in the fourth quarter of 2016 (See “Operating results — Income taxes” above), and the decrease in net earnings in 2017, offset in part by $28.6 million in lower working capital requirements in 2017 as compared to the prior year. Lower working capital requirements in 2017 were primarily due to improvements in A/R from the prior year, offset in part by higher inventory levels. Cash generated from A/R improved compared to 2016, primarily due to lower revenue levels in the fourth quarter of 2017 compared to the same period in 2016, as well as $30.0 million of additional A/R sold under our A/R sales program in 2017 compared to 2016, which we used as an alternative to drawing on our Revolving Facility. Our inventory levels increased compared to 2016, in part to support our new program ramps, but also as a result of demand volatility in our Communications and Enterprise end markets, including late changes from certain customers, as well as materials constraints throughout 2017, all of which resulted in us carrying higher than expected levels of inventory at December 31, 2017. We expect these adverse market conditions to continue into 2018.

From time to time, we extend the payment terms applicable to certain customers, and/or provide longer payment terms to new customers or with respect to new programs. If this becomes more prevalent, it could adversely impact our working capital requirements, and increase our financial exposure and credit risk. Commencing in the fourth quarter of 2016, the payment terms of one of our significant customers was extended. In connection therewith, we registered for that customer's supplier financing program pursuant to which participating suppliers may sell A/R from such customer to a third-party bank on an uncommitted basis in order to receive earlier payment. At December 31, 2017, we sold $52.3 million of A/R under this program (December 31, 2016 — $51.4 million; December 31, 2015 — nil). We utilized this program to substantially offset the effect of the extended payment terms on our working capital for the period. We pay interest with respect to this arrangement, which we record in finance costs in our consolidated statement of operations.

In 2016, we generated $173.3 million in cash from operating activities compared to $196.3 million in 2015. The decrease in cash provided by operating activities as compared to 2015 was primarily due to $127.9 million in higher working capital requirements in 2016 to support our growth, offset in part by the increase in net earnings in 2016 and the cash income tax refund of $52 million we received in the fourth quarter of 2016. See "Operating results — Income taxes" above. Higher inventory levels were required in 2016 compared to 2015, primarily to support new customer programs and increased demand from certain customers, and the increase in accounts receivable reflected the higher revenue levels in 2016 and the timing of revenue in the fourth quarter of 2016.

Free cash flow (non-IFRS):

Our non-IFRS free cash flow (defined below) of $21.0 million for 2017 decreased $89.2 million compared to 2016, primarily due to lower cash generated from operating activities in 2017 (discussed above) and $38.5 million of higher capital expenditures in 2017 as compared to 2016. We continue to invest in our manufacturing capabilities globally and to support new customer programs (see "Cash used in investing activities" below).

Our non-IFRS free cash flow of $110.2 million for 2016 decreased $3.0 million compared to 2015, primarily due to higher use of cash for operating activities in 2016 (as discussed above) compared to 2015, offset in part by the repayment of $14 million in cash advances by a former solar supplier in 2016.

Non-IFRS free cash flow is defined as cash provided by or used in operations after the purchase of property, plant and equipment (net of proceeds from the sale of certain surplus equipment and property), finance lease payments, repayments from a former solar supplier, and finance costs paid. As a measure of liquidity, in periods where it is relevant (the third quarter of 2015), non-IFRS free cash flow also included deposits received on the anticipated sale of our Toronto real property. Similarly, it is our intention to include any amounts received from the purchasers of our Toronto real property (should the sale be consummated) in non-IFRS free cash flow in the period of receipt. Note, that non-IFRS free cash flow, however, does not represent residual cash flow available to Celestica for discretionary expenditures. Management uses non-IFRS free cash flow as a measure, in addition to IFRS cash provided by or used in operations, to assess our operational cash flow performance. We believe non-IFRS free cash flow provides another level of transparency to our liquidity. A reconciliation of this measure to cash provided by operating activities measured under IFRS is set forth below:

	Year ended December 31		
	2015	**2016**	**2017**
IFRS cash provided by operations	$ 196.3	$ 173.3	$ 127.0
Purchase of property, plant and equipment, net of sales proceeds	(60.0)	(63.1)	(101.8)
Deposit on anticipated sale of real property	11.2	—	—
Finance lease payments	—	(4.5)	(6.5)
Repayments from (advances to) former solar supplier	(26.5)	14.0	12.5
Finance costs paid	(7.8)	(9.5)	(10.2)
Non-IFRS free cash flow	$ 113.2	$ 110.2	$ 21.0

Cash used in investing activities:

Our capital expenditures for 2017 were $102.6 million (2016 — $64.1 million; 2015 — $62.8 million). The capital expenditures were incurred primarily as a result of increased investments, primarily to enhance our manufacturing capabilities in various geographies and to support new customer programs. These expenditures in 2017 included expanding one of our production sites in Romania to support new ATS customers. We funded these capital expenditures from cash on hand. From time-to-time, we receive cash proceeds from the sale of surplus equipment and property. In 2015, we received a cash deposit of $11.2 million related to the anticipated sale of our Toronto real property. See "Cash Requirements" below for a description of the Property Sale Agreement.

In November 2016, we completed the acquisition of Karel. The purchase price of $14.9 million was financed with cash on hand. See "Summary of 2016" above.

In 2015, we entered into a supply agreement with a solar supplier (which was terminated in the fourth quarter of 2016) that included a commitment by us to provide cash advances to help secure our solar cell supply (prior to our exit from this business). All such cash advances were repaid in full by the second quarter of 2017. We advanced $26.5 million under this agreement in 2015 (net of repayments in 2015) and received cash repayments from the solar supplier of $12.5 million in 2017 (2016 — $14.0 million). See "Summary of 2017" above for a discussion of accounts receivable that remain outstanding from this entity as a customer.

Cash used in financing activities:

Share repurchases for cancellation:

During 2017, we paid $19.9 million (including transaction fees) to repurchase and cancel 1.9 million subordinate voting shares under our 2017 NCIB, which was launched in November 2017, at a weighted average price of $10.58 per share.

During 2016, we paid $34.3 million (including transaction fees) to repurchase and cancel 3.2 million subordinate voting shares under the 2016 NCIB at a weighted average price of $10.69 per share, including 2.8 million subordinate voting shares repurchased under a $30.0 million PSR we funded in March 2016 and completed in May 2016. Our 2016 NCIB expired in February 2017.

In addition to the completion of a $350.0 million SIB in 2015, pursuant to which we repurchased and cancelled approximately 26.3 million subordinate voting shares, we also paid $19.8 million (including transaction fees) in 2015 to repurchase and cancel 1.7 million subordinate voting shares under an NCIB we launched in 2014 at a weighted average price of $11.66 per share.

The SIB was funded with the proceeds of our $250.0 million Term Loan, $25.0 million drawn on our Revolving Facility and $75.0 million of cash. See "Capital Resources" below for a description of the Term Loan and Revolving Facility. We borrowed an additional $40.0 million under the Revolving Facility in 2016 to fund a portion of the share repurchases under our 2016 NCIB (described above), including under the $30.0 million PSR. During 2017, we made scheduled quarterly principal repayments of $25.0 million (2016 — $25.0 million; 2015 — $12.5 million) under the Term Loan and a $15.0 million (2016 — $50.0 million; 2015 — nil) repayment under the Revolving Facility.

Finance costs:

During 2017, we paid finance costs of $10.2 million (2016 — $9.5 million; 2015 — $7.8 million) (see "Cash requirements" below). Finance costs in 2015 included $2.1 million of debt issuance costs in connection with the amendment of our credit facility in May 2015. Commencing in June 2015, finance costs include interest on the Term Loan.

Treasury share repurchases:

During 2017, we paid $16.7 million (including transaction fees) for a broker to purchase 1.4 million subordinate voting shares in the open market to satisfy delivery obligations under our stock-based compensation plans (2016 — $18.2 million paid to purchase 1.6 million subordinate voting shares; 2015 — $28.9 million paid to purchase 2.5 million subordinate voting shares).

Finance lease payments:

During 2017, we paid $6.5 million (2016 — $4.5 million; 2015 — nil) under our finance lease agreements (see "Cash Requirements" below). Payments under these leases reduce our non-IFRS free cash flow. At December 31, 2017, $11.1 million (December 31, 2016 — $15.3 million; December 31, 2015 — $19.0 million) of our finance lease obligations related to our solar panel manufacturing equipment. In connection with the anticipated disposition of such equipment, we terminated and settled these obligations in full in January 2018.

Cash requirements:

We maintain the Revolving Facility, uncommitted bank overdraft facilities, and an A/R sales program, and participate in a customer's supplier financing program, to provide short-term liquidity and to have funds available for working capital and other investments to support our strategic priorities. Our working capital requirements can vary significantly from month-to-month due to a range of business factors, including the ramping of new programs, expansion of our services and business operations, timing of purchases, higher levels of inventory for new programs and anticipated customer demand, timing of payments and A/R collections, and customer forecasting variations. The international scope of our operations may also create working capital requirements in certain countries while other countries generate cash in excess of working capital needs. Moving cash between countries on a short-term basis to fund working capital is not always expedient due to local currency regulations, tax considerations, and other factors. To meet our working capital requirements and to provide short-term liquidity, we may draw on our Revolving Facility, sell A/R through our A/R sales program or participate in a customer's supplier financing program, while available. The timing and the amounts we borrow or repay under these facilities can vary significantly from month-to-month depending upon our cash requirements. In addition, since our A/R sales program and the supplier financing program are both on an uncommitted basis, there can be no assurance that any participant bank will purchase the accounts receivable we wish to sell to them under these programs. See “Capital Resources” below.

We do not believe that the aggregate amounts outstanding under our credit facility (together with amounts expected to be borrowed in connection with our anticipated acquisition of Atrenne) have had or will have a material adverse impact on our liquidity, our results of operations or financial condition. We are required to make quarterly principal repayments on the Term Loan of $6.25 million. We anticipate that interest on the Term Loan, based on current interest rates, will be less than $2 million per quarter. We anticipate that interest on the Revolving Facility, should our acquisition of Atrenne be consummated, will be approximately $1 million per quarter, based on current interest rates and anticipated borrowings. Any increase in prevailing interest rates or margins could cause this amount to increase. See “Capital Resources — Financial risks — Interest rate risk” below. We believe that cash flow from operating activities, together with cash on hand, availability under our Revolving Facility and intra-day and overnight bank overdraft facilities, and cash from the sale of A/R, will be sufficient to fund our acquisition of Atrenne (if consummated), as well as our working capital needs and planned capital spending (including the commitments described elsewhere herein).

We may use cash on hand, issue debt (including convertible debt) or equity securities, and are likely to increase our levels of third-party indebtedness (or any combination thereof) in the future to fund operations and/or make acquisitions. Any significant use of cash may adversely impact our cash position and liquidity. Any issuance or incurrence of debt would increase our debt leverage, and may reduce our debt agency ratings. In addition, any issuance of equity or convertible debt securities (the pricing of which would be subject to market conditions at the time of issuance) could dilute current shareholders’ positions; debt or convertible debt securities could have rights and privileges senior to those of equity holders; and the terms of debt securities could impose restrictions on our operations. Sales of our equity securities or convertible debt, or the perception that these sales could occur, could also cause the market price of our subordinate voting shares to decline. Any increase in our overall debt levels and/or the terms of any new or refinanced credit facility could: limit our ability to refinance our indebtedness on terms acceptable to us or at all; limit our flexibility to plan for and adjust to changing business and market conditions, and increase our vulnerability to general adverse economic and industry conditions; require us to dedicate a substantial portion of our cash flow to make interest and principal payments on such indebtedness, thereby limiting the availability of our cash flow to fund future acquisitions, working capital, business activities, and other general corporate requirements; limit our ability to obtain additional financing for working capital, to fund growth or for general corporate purposes; and subject us to higher levels of indebtedness than our competitors, which may cause a competitive disadvantage and may reduce our flexibility in responding to increased competition. In addition, the terms of any new or refinanced credit facility may contain restrictive covenants that limit our ability to engage in specified types of transactions and could require us to maintain specified financial ratios and satisfy other financial condition tests. Our ability to meet those financial ratios and tests will depend on our ongoing financial and operating performance, which, in turn, will be subject to economic conditions and to financial, market, and competitive factors, many of which are beyond our control. A breach of any of such covenants could result in a default under the instruments governing such indebtedness.

As at December 31, 2017, a significant portion of our cash and cash equivalents was held by foreign subsidiaries outside of Canada and is subject to withholding taxes, if applicable, upon repatriation under current tax laws. Cash and cash equivalents held by subsidiaries related to undistributed earnings that are considered indefinitely reinvested outside of Canada (which we do not intend to repatriate in the foreseeable future) are not subject to these withholding taxes. We currently expect to repatriate approximately $63 million from our Chinese subsidiaries and approximately $25 million from our Malaysian subsidiaries in the near term and have recorded the anticipated future withholding taxes as deferred income tax liabilities. While some of our subsidiaries are subject to local governmental restrictions on the flow of capital into and out of their jurisdictions (including in the form of cash dividends, loans or advances to us), which is required or desirable from time to time to meet our international working capital needs and other business objectives (as described above), these restrictions have not had a material impact on our ability to meet our cash obligations. At December 31, 2017, we had approximately $351 million (December 31, 2016 — $340 million) of cash and cash equivalents that were held by foreign subsidiaries outside of Canada that we do not intend to repatriate in the foreseeable future.

As at December 31, 2017, we had known contractual obligations that require future payments as follows (in millions):

	Total	2018	2019	2020	2021	2022	Thereafter
Borrowings under credit facility(i)	$ 187.5	$ 25.0	$ 25.0	$ 137.5	$ —	$ —	$ —
Operating leases	116.4	33.2	25.7	15.5	9.2	7.4	25.4
Finance leases (ii)	18.2	13.2	2.0	1.6	1.1	0.3	—
Pension plan contributions(iii)	11.9	11.9	—	—	—	—	—
Non-pension post-employment plan payments	37.1	4.2	2.4	3.0	2.9	3.1	21.5
Binding purchase order obligations (iv)	870.0	870.0	—	—	—	—	—
Purchase obligations under IT support agreements(v)	36.4	20.7	11.2	3.4	1.1	—	—
Total(vi)	$ 1,277.5	$ 978.2	$ 66.3	$ 161.0	$ 14.3	$ 10.8	$ 46.9

(i) Represents mandatory principal repayment obligations for our borrowings under the Revolving Facility and the Term Loan (based on amounts outstanding as of December 31, 2017), which mature concurrently on May 29, 2020, and excludes related interest and fees. The Term Loan requires mandatory quarterly principal repayments of $6.25 million until its maturity (when remaining amounts outstanding are due), and borrowings under the Revolving Facility are due upon maturity. Borrowings under the Revolving Facility bear interest for the period of the draw at various base rates selected by us consisting of LIBOR, Prime, Base Rate Canada, and Base Rate (each as defined in our current credit agreement), plus a margin ranging from 0.6% to 1.4% (except in the case of the LIBOR base rate, in which case, the margin ranges from 1.6% to 2.4%), based on a specified financial ratio based on indebtedness. Outstanding amounts under the Term Loan bear interest at LIBOR plus a margin ranging from 2.0% to 3.0% based on the same financial ratio. Based on the rates and the principal amount outstanding under the Term Loan ($187.5 million) and the Revolving Facility ($0.00) as of December 31, 2017, interest and fees are estimated to be less than $2 million per quarter, however, our interest expense is expected to increase by approximately $1 million per quarter if we use the Revolving Facility to partially fund our acquisition of Atrenne as anticipated. Actual amounts could differ materially from these estimates. Payment defaults under the credit facility will incur interest on unpaid amounts at an annual rate equal to the sum of (i) 2%, plus (ii) the Prime Rate, in the case of overdue amounts payable in Canadian dollars, or the Base Rate Canada, in the case of overdue amounts payable in U.S. dollars. If an event of default occurs and is continuing, the administrative agent may declare all advances on the facility to be immediately due and payable, and may cancel the lenders' commitments to make further advances thereunder. See “Capital Resources” below and note 12 to our 2017 audited consolidated financial statements for a description of our credit facility, including amounts outstanding thereunder, repayment dates and interest obligations.

(ii) Represents contractual obligations under finance leases, including $11.1 million related to solar panel manufacturing equipment (recorded as a current liability at December 31, 2017). In connection with the anticipated disposition of our solar equipment, we terminated and settled the remaining lease obligations related to this equipment in full in January 2018.

(iii) Based on our latest actuarial valuations, we estimate our funding requirement for 2018 to be $11.9 million (2017 — $11.9 million; 2016 — $19.4 million). In mid-2016, we provided a parental guarantee to the Trustees of our U.K. pension plans, and since the plans were considered sufficiently funded, no further contributions to these plans were required. See further details in note 19 to our 2017 audited consolidated financial statements. A significant deterioration in the asset values or asset returns could lead to higher than expected future contributions. Risks and uncertainties associated with actuarial valuation measurements may also result in higher future cash contributions. We fund our pension contributions from cash on hand. Although we have defined benefit plans that are currently in a net unfunded position, we do not expect our pension obligations will have a material adverse impact on our future results of operations, cash flows or liquidity.

(iv) Represents outstanding purchase orders with suppliers to acquire inventory. These purchase orders are generally short-term in nature and legally binding. However, a substantial portion of these purchase orders are for standard inventory items which we have procured for specific customers based on their purchase orders or forecasts, under which such customers have contractually assumed liability for such material, if not consumed.

(v) Represents obligations under IT support agreements.

(vi) This table excludes $27.5 million of long-term deferred income tax liabilities and $35.4 million of provisions and other non-current liabilities primarily pertaining to warranties and asset retirement obligations, as we are unable to reliably estimate the timing of any future payments related thereto. However, long-term liabilities included in our consolidated balance sheet include these items.

As at December 31, 2017, we had additional commitments that expire as follows (in millions):

	Total	2018	2019	2020	2021	2022	Thereafter
Foreign currency contracts[i]	$ 576.1	$ 576.1	$ —	$ —	$ —	$ —	$ —
Letters of credit, letters of guarantee and surety bonds[ii]	36.8	10.5	1.2	23.2	0.2	—	1.7
Capital expenditures[iii]	27.5	27.5	—	—	—	—	—
Total	$ 640.4	$ 614.1	$ 1.2	$ 23.2	$ 0.2	$ —	$ 1.7

(i) Represents the aggregate notional amounts of our forward currency contracts and swaps.

(ii) Includes $23.2 million in letters of credit issued under our Revolving Facility.

(iii) Our capital spending varies each period based on the timing of new business wins and forecasted sales levels. Based on our current operating plans, we anticipate capital spending for 2018 to be approximately 1.5% to 2.0% of revenue, and expect to fund these expenditures from cash on hand and through the financing agreements described below. As at December 31, 2017, we had committed $27.5 million for capital expenditures, principally for machinery and equipment to support new customer programs, of which approximately 40% is committed for Asia, 25% is committed for North America (excluding Canada), 20% is committed for Canada and 15% is committed for Europe.

Customer or program transfers between EMS providers are part of the competitive nature of our industry. From time-to-time, we make commitments to purchase assets, primarily inventory, or fund certain costs, as part of transitioning programs from a customer or a competitor. In April 2015, we purchased $27.6 million of inventory and assumed the relevant workforce in connection with a program transferred to us under an “operate-in-place” arrangement with one of our aerospace and defense customers. In September 2017, we purchased $5 million of inventory and assumed the relevant workforce in connection with a similar arrangement.

We have entered into financing agreements for the lease of machinery and equipment. For leases where the risks and rewards of ownership have substantially transferred to us, we capitalize the leased asset and record a corresponding liability on our consolidated balance sheet. In relation to our former solar panel manufacturing business, we entered into five-year lease agreements in April 2015, pursuant to which we leased $19.3 million of manufacturing equipment for our solar operations in Asia. At December 31, 2017, our remaining solar equipment lease obligations totaled $11.1 million, which we settled in full in January 2018, in anticipation of the sale of such equipment. See “Finance leases” in the contractual obligations table above.

On July 23, 2015, we entered into a property sale agreement (Property Sale Agreement) to sell our real property located in Toronto, Ontario, which includes the site of our corporate headquarters and our Toronto manufacturing operations, to a special purpose entity (Property Purchaser) to be formed by a consortium of three real estate developers. Subject to completion of the transaction, the purchase price is approximately $137 million Canadian dollars (approximately $109 million at year-end exchange rates), exclusive of applicable taxes and subject to certain adjustments. Upon execution of the Property Sale Agreement, the Property Purchaser paid us a cash deposit of $15 million Canadian dollars ($11.2 million at the then-prevailing exchange rate), which is non-refundable except in limited circumstances. Upon closing, which is subject to various conditions, including municipal approvals, the Property Purchaser is to pay us an additional $53.5 million Canadian dollars in cash (approximately $43 million at year-end exchange rates). The balance of the purchase price is to be satisfied upon closing by an interest-free, first-ranking mortgage in the amount of $68.5 million Canadian dollars (approximately $55 million at year-end exchange rates) to be registered on title to the property and having a term of two years from the closing date. In April 2017, we received notice from the Property Purchaser that the municipal zoning approval process required to complete the transaction will take longer than originally anticipated. As a result, the purchaser exercised its option under the Property Sale Agreement to extend the approvals period by one year. Assuming the timely satisfaction of various conditions, we currently expect the transaction to close during 2018. However, there can be no assurance that this transaction will be completed during 2018, or at all. As part of the transaction, we have agreed, upon closing, to enter into a short-term interim lease for our existing corporate headquarters and manufacturing premises on a portion of the real estate on a rent-free basis (subject to certain payments including taxes and utilities), which is to be followed by a long-term lease for our new corporate headquarters, on commercially reasonable arm’s-length terms. Whether or not this transaction is consummated, however, we are moving our existing Toronto manufacturing operations to another location.

In connection therewith, we entered into a long-term lease in November 2017 (in the Greater Toronto area) for the relocation of our Toronto manufacturing operations. Occupancy under such lease is anticipated to commence at the end of the first quarter of 2018. Such lease is included in the table above under "Operating Leases." We currently expect to complete the transition to this new manufacturing location by the end of the first quarter of 2019. In addition (as noted above), should the sale be consummated, we will enter into a long-term lease with the Property Purchaser for our new corporate headquarters. In connection therewith, we intend to move such headquarters to a temporary location while space in a new office building (to be built by the Property Purchaser on the site of our current location) is under construction. The temporary office relocation is currently expected to occur by the end of the first quarter of 2019. We will incur significant costs throughout the transition period (which commenced in the fourth quarter of 2017) to relocate our corporate headquarters and to transfer our Toronto manufacturing operations to its new location, and as we prepare and customize the new site to meet our manufacturing needs. These costs will consist of building improvements and new equipment which we will capitalize, as well as transition-related costs which we will record in other charges. We expect to incur approximately $16 million in building improvement and capital expenditure costs for the new manufacturing location, all anticipated to be incurred during 2018 and to be funded from cash on hand. We have incurred approximately $2 million of such costs through February 14, 2018. Transition costs are comprised of direct relocation costs, duplicate costs (such as rent expense, utility costs, depreciation charges, and personnel costs) incurred during the transition period, as well as cease-use costs incurred in connection with idle or vacated portions of the relevant premises that we would not have incurred but for these relocations. Any amounts received from the purchasers of our Toronto real property or gains recorded in connection with its sale, will be recorded as recoveries through other charges (recoveries). We incurred $1.6 million of such costs in the fourth quarter of 2017, consisting of utility costs related to idle premises, and depreciation charges and personnel costs used in the operation of duplicate production lines in advance of the transition. The costs, timing and execution of these relocations could have a material adverse impact on our business, our operating results and our financial position.

We have granted share unit awards to employees under our stock-based compensation plans. Under one such plan, we have the option to satisfy the delivery of shares upon vesting of the awards by purchasing subordinate voting shares in the open market or by settling such awards in cash, although we currently expect to satisfy these awards with subordinate voting shares purchased in the open market. Under our other stock-based compensation plan, we may (at the time of grant) authorize the grantee to elect to settle awards in either cash or subordinate voting shares. Absent such permitted election, grants will be settled in subordinate voting shares, which may be purchased in the open market or issued from treasury, subject to certain limits. The timing of, and the amounts paid for, these purchases can vary from period to period. We have funded, and expect to continue to fund, share repurchases for this purpose from cash on hand. During 2017, we paid $16.7 million (2016 — $18.2 million; 2015 — $28.9 million) to purchase subordinate voting shares in the open market through a broker for this purpose.

We have funded and intend to continue to fund share repurchases under our NCIBs and our SIBs from cash on hand, borrowings under our Revolving Facility, or a combination thereof. During 2017, we paid $19.9 million (2016 — $34.3 million; 2015 — $370.4 million), including transactions costs, to repurchase subordinate voting shares in the open market for cancellation.

We provide routine indemnifications, the terms of which range in duration and often are not explicitly defined. These may include indemnifications against third-party intellectual property infringement claims and certain third-party negligence claims for property damage. We have also provided indemnifications in connection with the sale of certain businesses and real property. The maximum potential liability from these indemnifications cannot be reasonably estimated. In some cases, we have recourse against other parties to mitigate our risk of loss from these indemnifications. Historically, we have not made significant payments relating to these types of indemnifications.

Litigation and contingencies:

In the normal course of our operations, we may be subject to lawsuits, investigations and other claims, including environmental, labor, product, customer disputes and other matters. Management believes that adequate provisions have been recorded where required. Although it is not always possible to estimate the extent of potential costs, if any, management believes that the ultimate resolution of all such pending matters will not have a material adverse impact on our financial performance, financial position or liquidity.

In 2007, securities class action proceedings were initiated against us and our former Chief Executive and Chief Financial Officers in the Ontario Superior Court of Justice. The proceedings were dismissed on January 16, 2017 with no payments by the defendants.

In the third quarter of 2017, the Brazilian Ministry of Science, Technology, Innovation and Communications (MCTIC) issued assessments seeking to disqualify certain amounts of research and development (R&D) expenses for the years 2006 to 2009, which entitled our Brazilian subsidiary (which ceased operations in 2009) to charge reduced sales tax levies to its customers. The assessments against our Brazilian subsidiary (including interest and penalties) total approximately 39 million Brazilian real (approximately $12 million at year-end exchange rates) for such years. Although we cannot predict the outcome of this matter, we believe that our R&D activities for the period are supportable, and it is probable that our position will be sustained upon full examination by the appropriate Brazilian authorities and, if necessary, upon consideration by the Brazilian judicial courts. Our position is supported by our Brazilian legal advisers.

Capital Resources

Our capital resources consist of cash provided by operating activities, access to the Revolving Facility, intraday and overnight bank overdraft facilities, an A/R sales program, a customer's supplier financing program, and our ability to issue debt or equity securities. We regularly review our borrowing capacity and make adjustments, as permitted, for changes in economic conditions and changes in our requirements. As part of our strategic initiatives to scale and diversify our ATS end market revenue base and expand our capabilities in our ATS businesses, we may use cash on hand, issue equity or debt, and are likely to increase our levels of third-party indebtedness (or any combination thereof) in order to fund operations or acquisitions, which could adversely impact our cash position and liquidity, increase our debt leverage (in the case of the issuance or incurrence of debt), reduce our debt agency ratings, dilute the current holders of our subordinate voting shares, and/or decrease the market price of such shares. Issuances of debt or convertible debt securities could have rights and privileges senior to those of equity holders, and the terms of such securities could impose restrictions on our operations. In addition, increases in our overall indebtedness levels, and/or the terms of any new or refinanced credit facility, could limit our flexibility to plan for and adjust to changing business and market conditions, increase our vulnerability to general adverse economic and industry conditions, limit our ability to refinance our indebtedness on terms acceptable to us or at all, require us to dedicate a substantial portion of our cash flow to make interest and principal payments on such indebtedness, subject us to higher levels of indebtedness than our competitors (which may put us at a competitive disadvantage), subject us to restrictive and financial covenants, and limit our ability to obtain additional financing. See “Liquidity — Cash requirements” above for further detail. We centrally manage our funding and treasury activities in accordance with corporate policies, the main objectives of which are to ensure appropriate levels of liquidity, to have funds available for working capital or other investments we determine are required to grow our business, to comply with debt covenants, to maintain adequate levels of insurance, and to balance our exposures to market risks.

At December 31, 2017, we had cash and cash equivalents of $515.2 million (December 31, 2016 — $557.2 million), of which approximately 78% was cash and 22% was cash equivalents, consisting of bank deposits. The majority of our cash and cash equivalents was denominated in U.S. dollars, and the remainder was held primarily in Canadian dollars and Chinese renminbi. We also held cash and cash equivalents in the following currencies: British pound sterling, Brazilian real, Czech koruna, Euro, Hong Kong dollar, Indian rupee, Japanese yen, Lao kip, Malaysian ringgit, Mexican peso, Philippines peso, Romanian leu, Singapore dollar, Taiwan dollar and Thai baht.

The majority of our cash and cash equivalents is held with financial institutions each of which had at December 31, 2017 a Standard and Poor’s short-term rating of A-1 or above. Our cash and cash equivalents are subject to intra-quarter swings, generally related to the timing of A/R collections, inventory purchases and payments, and other capital uses.

We are party to an amended and restated credit agreement that consists of the $300.0 million Revolving Facility and the $250.0 million non-revolving Term Loan (which is fully drawn), each of which matures in May 2020. The Term Loan was used to fund a portion of our share repurchases under a 2015 SIB. The remainder of the SIB was funded with $25.0 million drawn on the Revolving Facility (which has since been repaid) and $75.0 million in cash. The Revolving Facility has an accordion feature that allows us to increase the $300.0 million limit by an additional $150.0 million on an uncommitted basis upon satisfaction of certain terms and conditions. The Revolving Facility also includes a $25.0 million swing line, subject to the overall revolving credit limit, that provides for short-term borrowings up to a maximum of seven days. The Revolving Facility permits us and certain designated subsidiaries to borrow funds for general corporate purposes, including acquisitions. Borrowings under the Revolving Facility bear interest for the period of the draw at various base rates selected by us consisting of LIBOR, Prime, Base Rate Canada, and Base Rate (each as defined in the amended credit agreement), plus a margin. The margin for borrowings under the Revolving Facility ranges from 0.6% to 1.4% (except in the case of the LIBOR base rate, in which case, the margin ranges from 1.6% to 2.4%), based on a specified financial ratio based on indebtedness. Outstanding amounts under the Revolving Facility are due at maturity (but are required to be repaid prior thereto under specified circumstances). Amounts under the Revolving Facility are generally drawn for fixed periods of time, and if repaid, can be redrawn until the maturity date of the facility. The Term Loan bears interest at LIBOR plus a margin ranging from 2.0% to 3.0% based on the same financial ratio. The Term Loan requires quarterly principal repayments of $6.25 million, with the remainder due at maturity. We are permitted to make voluntary prepayments of the Term Loan, subject to certain terms and conditions. Prepayments on the Term Loan are also required under certain circumstances. Repaid amounts on the Term Loan may not be re-borrowed. During the first quarter of 2016, we borrowed $40.0 million under the Revolving Facility to fund share repurchases under our 2016 NCIB, including the $30.0 million PSR thereunder. In 2016, we repaid a total of $50.0 million under the Revolving Facility and $25.0 million under the Term Loan. In 2017, we repaid a total of $15.0 million under the Revolving Facility and $25.0 million under the Term Loan. During 2017, we incurred $6.5 million in interest expense under our credit facility (2016 — $7.3 million, 2015 — $3.9 million). As of December 31, 2017, there were no amounts outstanding under our Revolving Facility.

We are required to comply with certain restrictive covenants under the credit facility, including those relating to the incurrence of senior ranking indebtedness, the sale of assets, a change of control, and certain financial covenants related to indebtedness and interest coverage. Certain of our assets are pledged as security for borrowings under this facility. If an event of default occurs and is continuing, the administrative agent may declare all advances on the facility to be immediately due and payable and may cancel the lenders' commitments to make further advances thereunder. At December 31, 2017, there was $187.5 million outstanding under our Term Loan and no amounts outstanding under our Revolving Facility (December 31, 2016 — $212.5 million outstanding under our Term Loan and $15.0 million outstanding under our Revolving Facility), and we were in compliance with all restrictive and financial covenants thereunder. The credit facility is scheduled to mature in May 2020.

At December 31, 2017, we had $23.2 million (December 31, 2016 — $25.8 million) outstanding in letters of credit under the Revolving Facility. We also arrange letters of credit and surety bonds outside of the Revolving Facility. At December 31, 2017, we had $13.6 million (December 31, 2016 — $12.0 million) of such letters of credit and surety bonds outstanding.

At December 31, 2017, we had $276.8 million available (December 31, 2016 — $259.2 million available) under the Revolving Facility for future borrowings. We also have a total of $73.5 million of uncommitted bank overdraft facilities available for intraday and overnight operating requirements. There were no amounts outstanding under these overdraft facilities at December 31, 2017 or December 31, 2016.

We have an accounts receivable sales agreement to sell up to $200.0 million (reduced from $250.0 million on March 23, 2017 based on a review of our requirements under this agreement) at any one time in accounts receivable on an uncommitted basis (subject to pre-determined limits by customer) to two third-party banks. Each of these banks had a Standard and Poor's short-term rating of A-2 or above and a long-term rating of A- or above at December 31, 2017. The term of this agreement has been annually extended in recent years (including in November 2017) for additional one-year periods (and is currently extendable to November 2019 under specified circumstances) but may be terminated earlier as provided in the agreement. At December 31, 2017, $80.0 million (December 31, 2016 — $50.0 million) of A/R were sold under this program, and de-recognized from our accounts receivable balance. As our A/R sales program is on an uncommitted basis, there can be no assurance that any of the banks will purchase the A/R we intend to sell to them under this program.

We have entered into an agreement with a third-party bank as part of a customer's supplier financing program pursuant to which participating suppliers may sell accounts receivable from such customer to a third-party bank on an uncommitted basis in order to receive earlier payment. At December 31, 2017, we sold $52.3 million of accounts receivable under this program (December 31, 2016 — $51.4 million). We utilized this program to substantially offset the effect of extended payment terms required by such customer on our working capital for the period. As the supplier financing program is on an uncommitted basis, there can be no assurance that the bank will purchase the A/R we intend to sell to them thereunder.

The timing and the amounts we borrow and repay under our revolving credit and overdraft facilities, or sell under our A/R sales program or the supplier financing program, can vary significantly from month-to-month depending upon our working capital and other cash requirements.

Standard and Poor's assigns a corporate credit rating to Celestica. This rating is not a recommendation to buy, sell or hold securities, as it does not comment as to market price or suitability for a particular investor. This rating may be subject to revision or withdrawal at any time by the rating organization. At December 31, 2017, our Standard and Poor's corporate credit rating was BB, with a stable outlook. A reduction in our credit rating or change in outlook could adversely impact our future cost of borrowing.

Our strategy on capital risk management has not changed significantly since the end of 2016. Other than the restrictive and financial covenants associated with our credit facility noted above, we are not subject to any contractual or regulatory capital requirements. While some of our international operations are subject to government restrictions on the flow of capital into and out of their jurisdictions, these restrictions have not had a material impact on our operations or cash flows.

Financial instruments:

Our short-term investment objectives are to preserve principal and to maximize yields without significantly increasing risk, while at the same time not materially restricting our short-term access to cash.

The majority of our cash balances are held in U.S. dollars. We price the majority of our products in U.S. dollars and the majority of our materials costs are also denominated in U.S. dollars. However, a significant portion of our non-materials costs (including payroll, pensions, site costs and costs of locally sourced supplies and inventory) are denominated in various other currencies. As a result, we may experience foreign exchange gains or losses on translation or transactions due to currency fluctuations.

We have a foreign exchange risk management policy in place to govern our hedging activities. We do not enter into speculative trades. Our current hedging activity is designed to reduce the variability of our foreign currency costs where we have local manufacturing operations. We enter into foreign exchange forward contracts to hedge our cash flow exposures and foreign currency swaps to hedge our balance sheet exposures. Balance sheet hedges are based on our forecasts of the future position of net monetary assets or liabilities denominated in foreign currencies and, therefore, may not mitigate the full impact of any translation impacts in the future. There can be no assurance that our hedging transactions will be successful in mitigating our foreign exchange risk.

At December 31, 2017, we had foreign exchange forwards and swaps to trade U.S. dollars in exchange for the following currencies:

Currency	Contract amount in U.S. dollars (in millions)	Weighted average exchange rate of U.S. dollars	Maximum period in months	Fair value gain (loss) (in millions)
Canadian dollar	$ 204.8	$ 0.80	12	$ 4.1
Thai baht	79.0	0.03	12	2.2
Malaysian ringgit	48.4	0.23	12	2.6
Mexican peso	29.3	0.05	12	(0.9)
British pound	56.4	1.34	3	(0.5)
Chinese renminbi	71.6	0.15	12	1.5
Euro	28.7	1.19	12	0.1
Romanian leu	28.4	0.25	12	0.6
Singapore dollar	25.0	0.73	12	0.6
Other	4.5			—
Total	$ 576.1			$ 10.3

These contracts, which generally extend for periods of up to 12 months, will expire by the end of the fourth quarter of 2018. The fair value of the outstanding contracts at December 31, 2017 was a net unrealized gain of $10.3 million (December 31, 2016 — net unrealized loss of $9.6 million). The unrealized gains or losses are a result of fluctuations in foreign exchange rates between the date the currency forward or swap contracts were entered into and the valuation date at period end.

Financial risks:

We are exposed to a variety of risks associated with financial instruments and otherwise.

Currency risk: Due to the global nature of our operations, we are exposed to exchange rate fluctuations on our financial instruments denominated in various currencies. The majority of our currency risk is driven by operational costs, including income tax expense, incurred in local currencies by our subsidiaries. As part of our risk management program, we attempt to mitigate currency risk through a hedging program using forecasts of our anticipated future cash flows and balance sheet exposures denominated in foreign currencies. We enter into foreign exchange forward contracts and swaps, generally for periods up to 12 months, to lock in the exchange rates for future foreign currency transactions, which is intended to reduce the variability of our operating costs and future cash flows denominated in local currencies. While these contracts are intended to reduce the effects of fluctuations in foreign currency exchange rates, our hedging strategy does not mitigate the longer-term impacts of changes to foreign exchange rates. Although our functional currency is the U.S. dollar, currency risk on our income tax expense arises as we are generally required to file our tax returns in the local currency for each particular country in which we have operations. While our hedging program is designed to mitigate currency risk vis-à-vis the U.S. dollar, we remain subject to taxable foreign exchange impacts in our translated local currency financial results relevant for tax reporting purposes. We do not use derivative financial instruments for speculative purposes.

We cannot predict changes in currency exchange rates, the impact of exchange rate changes on our operating results, nor the degree to which we will be able to manage the impact of currency exchange rate changes. Such changes, including as a result of Brexit or other global events impacting currency exchange rates could materially adversely affect our business, results of operations and financial condition.

Interest rate risk: Borrowings under our credit facility bear interest at specified rates, plus specified margins (as described above). Our borrowings under this facility expose us to interest rate risk due to potential increases to the specified rates and margins. A one-percentage point increase in these rates would increase interest expense, based on outstanding borrowings of $187.5 million at December 31, 2017, by approximately $2 million annually.

Credit risk: Credit risk refers to the risk that a counterparty may default on its contractual obligations resulting in a financial loss to us. We believe our credit risk of counterparty non-performance is relatively low, however, if a key supplier (or any company within such supplier's supply chain) or customer experiences financial difficulties or fails to comply with their contractual obligations, this could result in a financial loss to us. In connection therewith, see “Summary of 2017” and “Summary of 2016” above for a description of the write-downs recorded in each of 2017 and 2016 related to our exit from the solar panel manufacturing business. With respect to our financial market activities, we have adopted a policy of dealing only with credit-worthy counterparties to help mitigate the risk of financial loss from defaults. We monitor the credit risk of the counterparties with whom we conduct business, through a combined process of credit rating reviews and portfolio reviews. To attempt to mitigate the risk of financial loss from defaults under our foreign currency forward contracts and swaps, our contracts are held by counterparty financial institutions, each of which had at December 31, 2017 a Standard and Poor’s rating of A-2 or above. In addition, we maintain cash and short-term investments in highly-rated investments or on deposit with major financial institutions. Each financial institution with which we have our A/R sales program and the supplier financing program had a Standard and Poor’s short-term rating of A-2 or above and a long-term rating of A- or above at December 31, 2017. Each financial institution from which annuities have been purchased for the defined benefit component of our Canadian pension plan had an A.M. Best or Standard and Poor’s long-term rating of A- or above at December 31, 2017. In addition, the financial institutions from which annuities have been purchased for the defined benefit component of our U.K. pension plans are governed by local regulatory bodies.

We also provide unsecured credit to our customers in the normal course of business. From time to time, we extend the payment terms applicable to certain customers, and/or provide longer payment terms to new customers or with respect to new programs. If this becomes more prevalent, it could adversely impact our working capital requirements, and increase our financial exposure and credit risk. We attempt to mitigate customer credit risk by monitoring our customers’ financial condition and performing ongoing credit evaluations as appropriate. In certain instances, we may obtain letters of credit or other forms of security from our customers. We may also purchase credit insurance from a financial institution to reduce our credit exposure to certain customers. We consider credit risk in determining our allowance for doubtful accounts and we believe our allowances, as adjusted from time to time, are adequate.

Liquidity risk: Liquidity risk is the risk that we may not have cash available to satisfy our financial obligations as they come due. The majority of our financial liabilities recorded in accounts payable, accrued and other current liabilities and provisions are due within 90 days. We believe that cash flow from operating activities, together with cash on hand, cash from the sale of A/R, and borrowings available under our Revolving Facility and intraday and overnight bank overdraft facilities are sufficient to fund our currently anticipated financial obligations.

See note 21 to our 2017 audited consolidated financial statements for further details.

Related Party Transactions

Onex Corporation (Onex) beneficially owns or controls, directly or indirectly, all of our outstanding multiple voting shares. Accordingly, Onex has the ability to exercise significant influence over our business and affairs and generally has the power to determine all matters submitted to a vote of our shareholders where the subordinate voting shares and multiple voting shares vote together as a single class. Mr. Gerald Schwartz, the Chairman of the Board, President and Chief Executive Officer of Onex, and one of our directors until December 31, 2016, indirectly owns shares representing the majority of the voting rights of Onex.

In January 2009, we entered into a Services Agreement with Onex for the services of Mr. Schwartz as a director of Celestica, pursuant to which Onex received compensation for such services. The initial term of this agreement was one year and it automatically renews for successive one-year terms unless either party provides a notice of intent not to renew. In connection with the retirement of Mr. Schwartz from our Board of Directors as of December 31, 2016, and the appointment of Mr. Tawfiq Popatia (also an officer of Onex) as his replacement effective January 1, 2017, the Services Agreement was amended as of such date to replace all references to Mr. Schwartz therein with references to Mr. Popatia, and to increase the annual fee payable to Onex thereunder from $200,000 per year to $235,000 per year (to be consistent with current annual Board retainer fees), payable in DSUs in equal quarterly installments in arrears. The Services Agreement terminates automatically and the rights of Onex to receive compensation (other than accrued and unpaid compensation) will terminate (a) 30 days after the first day on which Onex ceases to hold at least one multiple voting share of Celestica or any successor company or (b) the date Mr. Popatia ceases to be a director of Celestica for any reason.

Also see discussion in “Cash requirements” above for a description of the Property Sale Agreement (and lease arrangements) with respect to our real property located in Toronto, Ontario (which includes our corporate headquarters and our Toronto manufacturing operations). Approximately 30% of the interests in the Property Purchaser are to be held by a privately-held company in which Mr. Schwartz has a material interest. Mr. Schwartz also has a non-voting interest in an entity which is to have an approximate 25% interest in the Property Purchaser.

Outstanding Share Data

As of February 14, 2018, we had 124,246,948 outstanding subordinate voting shares and 18,600,193 outstanding multiple voting shares. As of such date, we also had 372,458 outstanding stock options, 3,716,960 outstanding RSUs, 3,300,645 outstanding PSUs (assuming vesting of 100% of the target amount granted (amounts that will vest range from 0% to 200% of the target amount granted)), and 1,455,550 outstanding DSUs; each vested option or unit entitles the holder thereof to receive one subordinate voting share (or in certain cases, cash) pursuant to the terms thereof (subject to certain time or performance-based vesting conditions).

Controls and Procedures

Evaluation of disclosure controls and procedures:

Our management is responsible for establishing and maintaining a system of disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the U.S. Exchange Act) designed to ensure that information we are required to disclose in the reports that we file or submit under the U.S. Exchange Act is recorded, processed, summarized and reported within the time periods specified in the U.S. Securities and Exchange Commission’s rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by an issuer in the reports that it files or submits under the U.S. Exchange Act is accumulated and communicated to the issuer’s management, including its principal executive officer or officers and principal financial officer or officers, or persons performing similar functions, as appropriate, to allow timely decisions regarding required disclosure.

Under the supervision of and with the participation of management, including our principal executive officer and principal financial officer, we have evaluated the effectiveness of the design and operation of our disclosure controls and procedures as of December 31, 2017. Based on that evaluation, our principal executive officer and principal financial officer have concluded that, as of December 31, 2017, our disclosure controls and procedures are effective to meet the requirements of Rules 13a-15(e) and 15d-15(e) under the U.S. Exchange Act.

A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that its objectives are met. Due to inherent limitations in all such systems, no evaluation of controls can provide absolute assurance that all control issues within a company have been detected. Accordingly, our disclosure controls and procedures are designed to provide reasonable, not absolute, assurance that the objectives of our disclosure control system are met.

Changes in internal control over financial reporting:

We did not identify any change in our internal control over financial reporting in connection with our evaluation thereof that occurred during the year ended December 31, 2017 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting. Although we implemented certain changes to our business processes, systems and controls in preparation for the adoption of new accounting standards IFRS 15 (Revenue from Contracts with Customers) and IFRS 9 (Financial Instruments), no significant changes were made to our internal control over financial reporting due to the adoption of these standards.

Management's report on internal control over financial reporting:

Reference is made to our Management's Report on page F-1 of our Annual Report on Form 20-F for the year ended December 31, 2017. Our auditors, KPMG LLP, an independent registered public accounting firm, have issued an audit report on our internal control over financial reporting as of December 31, 2017. This report appears on page F-2 of such Annual Report.

Unaudited Quarterly Financial Highlights (in millions, except percentages and per share amounts):

	2016				2017			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
Revenue	$ 1,353.3	$ 1,485.5	$ 1,554.0	$ 1,623.7	$ 1,469.9	$ 1,558.5	$ 1,528.2	$ 1,553.9
Gross profit %	6.9%	7.5%	7.1%	6.9%	7.0%	7.0%	6.8%	6.6%
Net earnings	$ 25.6	$ 36.2	$ 53.6	$ 20.9	$ 22.8	$ 34.4	$ 33.4	$ 14.4
Weighted average # of basic shares	143.5	142.1	140.8	140.9	142.1	143.4	143.7	143.3
Weighted average # of diluted shares	145.2	144.1	143.0	143.4	144.0	145.5	145.7	145.5
# of shares outstanding	143.3	140.7	140.8	140.9	143.2	143.6	143.7	141.8
IFRS earnings per share:								
basic	$ 0.18	$ 0.25	$ 0.38	$ 0.15	$ 0.16	$ 0.24	$ 0.23	$ 0.10
diluted	$ 0.18	$ 0.25	$ 0.37	$ 0.15	$ 0.16	$ 0.24	$ 0.23	$ 0.10

Comparability quarter-to-quarter:

The quarterly data reflects the following: the fourth quarters of 2016 and 2017 include the results of our annual impairment testing of goodwill, intangible assets and property, plant and equipment; and all quarters have been impacted by our restructuring actions. The amounts attributable to these items vary from quarter-to-quarter.

Fourth quarter 2017 compared to fourth quarter 2016:

Revenue of $1.55 billion for the fourth quarter of 2017 decreased 4% compared to the same period in 2016. Compared to the fourth quarter of 2016, revenue dollars in the fourth quarter of 2017 from our Communications end market decreased 12%, primarily due to weaker demand (offset in part by new programs) relative to the fourth quarter of 2016, which had benefited from new programs and demand strength. Revenue dollars from our Enterprise end market decreased 4% in the fourth quarter of 2017 compared to the prior year period, primarily due to demand softness. These decreases were offset in part by a 6% revenue increase from our ATS end market in the fourth quarter of 2017 compared to the prior year period, primarily due to new programs, as well as stronger demand in our semiconductor business, which more than offset the decline in revenue due to our exit from the solar panel manufacturing business (which negatively impacted ATS end market revenue by 4%). Gross margin for the fourth quarter of 2017 decreased to 6.6% of total revenue compared to 6.9% of total revenue for the same period in 2016, primarily due to lower revenue (primarily in our Communications end market), unfavorable changes in program mix, $3 million of additional ramping costs with respect to certain new programs (described in "Operating Results" above), offset in part by margin improvements in our ATS end market, including from our semiconductor business. Net earnings for the fourth quarter of 2017 of $14.4 million were $6.5 million lower compared to the same period in the prior year, primarily due to the decrease in gross profit described above and $8.3 million in refund interest income that benefited the fourth quarter of 2016, offset in part by lower other charges ($17.5 million in the fourth quarter of 2017 as compared to $25.8 million in the prior year period), primarily due to an $11.2 million reduction in restructuring charges in the fourth quarter of 2017 as compared to the prior year period. Restructuring charges for the fourth quarter of 2016 were negatively impacted by charges related to our exit from the solar panel manufacturing business.

Fourth quarter 2017 compared to third quarter 2017:

Revenue for the fourth quarter of 2017 increased 2% compared to the third quarter of 2017. Compared to the previous quarter, revenue dollars from our Enterprise end market increased 15%, primarily due to demand strength, and revenue dollars from our ATS end market increased 6%, primarily due to our new "operate-in-place" program that commenced in the third quarter of 2017 in our aerospace and defense business. These increases were offset in part by an 8% sequential revenue decline in our Communications end market, primarily due to lower demand, including late changes in the quarter from certain customers. Gross margin for the fourth quarter of 2017 decreased to 6.6% of total revenue compared to 6.8% of total revenue for the third quarter of 2017. Although revenue was higher in the fourth quarter of 2017, gross margin was negatively impacted by changes in program mix and the late changes in demand, the timing of which prevented us from reducing certain variable production costs in light of lower volumes. Net earnings for the fourth quarter of 2017 of $14.4 million were $19.0 million lower compared to the previous quarter, primarily due to $13.6 million in higher other charges, including higher restructuring charges of $9.1 million and $1.6 million of Toronto transition costs, and $3.1 million in higher SG&A expense in the fourth quarter of 2017 as compared to the prior quarter.

Fourth quarter 2017 actual compared to guidance:

IFRS earnings per share (EPS) for the fourth quarter of 2017 of $0.10 on a diluted basis reflected an aggregate charge of $0.15 (pre-tax) per share for employee stock-based compensation expense, amortization of intangible assets (excluding computer software) and restructuring charges. We provided a range on October 26, 2017 of an aggregate charge of between $0.09 to $0.15 per share for these items. We cannot predict changes in currency exchange rates, the impact of such changes on our operating results, or the degree to which we will be able to manage such impacts. IFRS earnings before income taxes as a percentage of revenue for the fourth quarter of 2017 was 1.4%.

On October 26, 2017, we provided the following guidance for the fourth quarter of 2017:

	Q4 2017	
	Guidance	**Actual**
IFRS revenue (in billions)	$1.5 to $1.6	$1.55
Non-IFRS operating margin	3.6% at the mid-point of expectations	3.3%
Non-IFRS adjusted earnings per share (diluted)	$0.27 to $0.33	$0.27

For the fourth quarter of 2017, revenue of $1.55 billion was at the mid-point of our guidance range, reflecting demand strength from our Enterprise end market, offset by demand softness from our Communications end market. Our non-IFRS operating margin of 3.3% for the fourth quarter of 2017 was negatively impacted by late demand changes from certain customers, the timing of which prevented us from reducing certain variable production costs in light of the lower volumes. This also negatively impacted our non-IFRS adjusted EPS of $0.27 per share for the fourth quarter of 2017.

Our guidance includes a range for adjusted EPS (which is a non-IFRS measure and is defined below). Management considers non-IFRS adjusted EPS to be an important measure for investors to understand our core operating performance. A reconciliation of non-IFRS adjusted net earnings to IFRS net earnings is set forth below.

Non-IFRS measures:

Management uses adjusted net earnings and the other non-IFRS measures described herein (i) to assess operating performance and the effective use and allocation of resources, (ii) to provide more meaningful period-to-period comparisons of operating results, (iii) to enhance investors' understanding of the core operating results of our business, and (iv) to set management incentive targets. We believe the non-IFRS measures we present herein are useful to investors, as they enable investors to evaluate and compare our results from operations in a more consistent manner (by excluding specific items that we do not consider to be reflective of our ongoing operating results), to evaluate cash resources that we generate each period, and to provide an analysis of operating results using the same measures our chief operating decision makers use to measure performance. In addition, management believes that the use of a non-IFRS adjusted tax expense and a non-IFRS adjusted effective tax rate provides improved insight into the tax effects of our ongoing business operations, and is useful to management and investors for historical comparisons and forecasting. These non-IFRS financial measures result largely from management's determination that the facts and circumstances surrounding the excluded charges or recoveries are not indicative of the ordinary course of the ongoing operation of our business.

We believe investors use both IFRS and non-IFRS measures to assess management's past, current and future decisions associated with our priorities and our allocation of capital, as well as to analyze how our business operates in, or responds to, swings in economic cycles or to other events that impact our core operations.

In addition to cash cycle days (including the components thereof) and inventory turns (each described under the caption "Other Performance Indicators" above), which have no defined meanings under IFRS, we use the following non-IFRS measures: adjusted gross profit, adjusted gross margin (adjusted gross profit as a percentage of revenue), adjusted SG&A, adjusted SG&A as a percentage of revenue, operating earnings (adjusted EBIAT), operating margin (operating earnings as a percentage of revenue), adjusted net earnings, adjusted EPS, adjusted ROIC, free cash flow, adjusted tax expense and adjusted effective tax rate. Adjusted EBIAT, adjusted ROIC, free cash flow, adjusted tax expense and adjusted effective tax rate are further described in the tables below. In calculating these non-IFRS financial measures, management excludes the following items, where applicable: employee stock-based compensation expense, amortization of intangible assets (excluding computer software), restructuring and other charges, net of recoveries (including Toronto transition costs (recoveries), described below), other solar charges (described below), and the write-down of goodwill, intangible assets, and property, plant and equipment, all net of the associated tax adjustments (which are set forth in the table below), and deferred tax write-offs/costs or recoveries associated with restructuring actions or restructured sites.

Non-IFRS measures do not have any standardized meaning prescribed by IFRS and may not be comparable to similar measures presented by other companies. Non-IFRS measures are not measures of performance under IFRS and should not be considered in isolation or as a substitute for any standardized measure under IFRS. The most significant limitation to management's use of non-IFRS financial measures is that the charges or credits excluded from the non-IFRS measures are nonetheless charges or credits that are recognized under IFRS and that have an economic impact on us. Management compensates for these limitations primarily by issuing IFRS results to show a complete picture of our performance, and reconciling non-IFRS results back to IFRS results.

The economic substance of these exclusions and management's rationale for excluding them from non-IFRS financial measures is provided below:

Employee stock-based compensation expense, which represents the estimated fair value of stock options, RSUs and PSUs granted to employees, is excluded because grant activities vary significantly from quarter-to-quarter in both quantity and fair value. In addition, excluding this expense allows us to better compare core operating results with those of our competitors who also generally exclude employee stock-based compensation expense in assessing their operating performance, who may have different granting patterns and types of equity awards, and who may use different valuation assumptions than we do.

Amortization charges (excluding computer software) consist of non-cash charges against intangible assets that are impacted by the timing and magnitude of acquired businesses. Amortization of intangible assets varies among our competitors, and we believe that excluding these charges permits a better comparison of core operating results with those of our competitors who also generally exclude amortization charges in assessing operating performance.

Restructuring and other charges, net of recoveries, include costs relating to employee severance, lease terminations, site closings and consolidations, write-downs of owned property and equipment which are no longer used and are available for sale, reductions in infrastructure, Toronto transition costs (recoveries) (discussed below), acquisition-related consulting, transaction and integration costs, and legal settlements (recoveries). We exclude restructuring and other charges, net of recoveries, because we believe that they are not directly related to ongoing operating results and do not reflect expected future operating expenses after completion of these activities. We believe these exclusions permit a better comparison of our core operating results with those of our competitors who also generally exclude these charges, net of recoveries, in assessing operating performance.

Restructuring and other charges, net of recoveries, also includes Toronto transition costs (recoveries), which are costs (recoveries) recorded in connection with the sale of our Toronto real property, the relocation of our existing Toronto manufacturing operations, the move of our corporate headquarters to a temporary location while space in a new office building for such headquarters at our current location (to be built by, and which we intend to lease from, the purchasers of our Toronto real property) is under construction, as well as the move to such new office space upon its completion. Toronto transition costs consist of direct relocation costs, duplicate costs (such as rent expense, utility costs, depreciation charges, and personnel costs) incurred during the transition period, as well as cease-use costs incurred in connection with idle or vacated portions of the relevant premises that we would not have incurred but for these relocations. Toronto transition recoveries will consist of amounts received from the purchasers of the Toronto real property or gains we record in connection with its sale, if consummated. We believe that excluding these costs and recoveries permits a better comparison of our core operating results from period-to-period, as these costs will not reflect our ongoing operations once these relocations are complete.

Other solar charges, consisting of non-cash charges to further write-down the carrying value of our then-remaining solar panel inventory and the write-down of solar accounts receivable (A/R) (primarily as a result of a solar customer's bankruptcy) to estimated recoverable amounts, were recorded in the second quarter of 2017 through cost of sales and SG&A expenses, respectively. Both of these impairment charges, which were identified during the wind down phase of our solar operations after our decision to exit the solar panel manufacturing business, are excluded as they pertain to a business we have exited, and we therefore believe they are no longer directly related to our ongoing core operating results. Although we recorded significant impairment charges to write down our solar panel inventory in the third quarter of 2016, those charges were not excluded in the determination of our non-IFRS financial measures for such period, as we were then still engaged in the solar panel manufacturing business. In connection with this wind-down, we also recorded net non-cash impairment charges to write down the carrying value of our solar panel manufacturing equipment held for sale to its estimated sales value less costs to sell, which we recorded through other charges during 2017.

Impairment charges, which consist of non-cash charges against goodwill, intangible assets and property, plant and equipment, result primarily when the carrying value of these assets exceeds their recoverable amount. Our competitors may record impairment charges at different times, and we believe that excluding these charges permits a better comparison of our core operating results with those of our competitors who also generally exclude these charges in assessing operating performance.

Deferred tax write-offs/costs or recoveries associated with restructuring actions or restructured sites are excluded, as we believe that these write-offs/costs or recoveries do not reflect core operating performance and vary significantly among those of our competitors who also generally exclude these charges or recoveries in assessing operating performance.

The following table sets forth, for the periods indicated, the various non-IFRS measures discussed above, and a reconciliation of IFRS to non-IFRS measures, (in millions, except percentages and per share amounts):

	Three months ended December 31				Year ended December 31			
	2016		2017		2016		2017	
		% of revenue		% of revenue		% of revenue		% of revenue
IFRS revenue	$ 1,623.7		$ 1,553.9		$ 6,016.5		$ 6,110.5	
IFRS gross profit	$ 111.9	6.9%	$ 102.4	6.6%	$ 427.6	7.1%	$ 417.8	6.8%
Employee stock-based compensation expense	4.6		3.2		15.0		14.6	
Other solar charges (inventory write-down)	—		—		—		0.9	
Non-IFRS adjusted gross profit	$ 116.5	7.2%	$ 105.6	6.8%	$ 442.6	7.4%	$ 433.3	7.1%
IFRS SG&A	$ 53.2	3.3%	$ 51.1	3.3%	$ 211.1	3.5%	$ 203.2	3.3%
Employee stock-based compensation expense	(5.8)		(4.2)		(18.0)		(15.5)	
Other solar charges (A/R write-down)	—		—		—		(0.5)	
Non-IFRS adjusted SG&A	$ 47.4	2.9%	$ 46.9	3.0%	$ 193.1	3.2%	$ 187.2	3.1%
IFRS earnings before income taxes	$ 29.3	1.8%	$ 22.1	1.4%	$ 161.0	2.7%	$ 132.4	2.2%
Finance costs	2.7		2.6		10.0		10.1	
Refund interest income	(8.3)		—		(14.3)		—	
Employee stock-based compensation expense	10.4		7.4		33.0		30.1	
Amortization of intangible assets (excluding computer software)	1.5		1.1		6.0		5.5	
Net restructuring, impairment and other charges	25.8		17.5		25.5		37.0	
Other solar charges (inventory and A/R write-down)	—		—		—		1.4	
Non-IFRS operating earnings (adjusted EBIAT) [(1)]	$ 61.4	3.8%	$ 50.7	3.3%	$ 221.2	3.7%	$ 216.5	3.5%
IFRS net earnings	$ 20.9	1.3%	$ 14.4	0.9%	$ 136.3	2.3%	$ 105.0	1.7%
Employee stock-based compensation expense	10.4		7.4		33.0		30.1	
Amortization of intangible assets (excluding computer software)	1.5		1.1		6.0		5.5	
Net restructuring, impairment and other charges	25.8		17.5		25.5		37.0	
Other solar charges (inventory and A/R write-down)	—		—		—		1.4	
Adjustments for taxes [(2)]	0.9		(0.7)		0.1		(6.7)	
Non-IFRS adjusted net earnings	$ 59.5		$ 39.7		$ 200.9		$ 172.3	
Diluted EPS								
Weighted average # of shares (in millions)	143.4		145.5		143.9		145.2	
IFRS earnings per share	$ 0.15		$ 0.10		$ 0.95		$ 0.72	
Non-IFRS adjusted earnings per share	$ 0.41		$ 0.27		$ 1.40		$ 1.19	
# of shares outstanding at period end (in millions)	140.9		141.8		140.9		141.8	
IFRS cash provided by operations	$ 87.5		$ 43.7		$ 173.3		$ 127.0	
Purchase of property, plant and equipment, net of sales proceeds	(17.8)		(20.6)		(63.1)		(101.8)	
Finance lease payments	(1.0)		(1.7)		(4.5)		(6.5)	
Repayments from former solar supplier	3.0		—		14.0		12.5	
Finance costs paid	(2.4)		(2.6)		(9.5)		(10.2)	
Non-IFRS free cash flow [(3)]	$ 69.3		$ 18.8		$ 110.2		$ 21.0	
IFRS ROIC % [(4)]	10.8%		7.4%		15.2%		11.7%	
Non-IFRS Adjusted ROIC % [(4)]	22.7%		17.0%		20.8%		19.1%	

(1) Management uses non-IFRS operating earnings (adjusted EBIAT) as a measure to assess our operational performance related to our core operations. Non-IFRS adjusted EBIAT is defined as earnings before finance costs (consisting of interest and fees related to our credit facility, our accounts receivable sales program, and a customer's supplier financing program), amortization of intangible assets (excluding computer software) and income taxes. Non-IFRS adjusted EBIAT also excludes, in periods where such charges have been recorded, employee stock-based compensation expense, restructuring and other charges, including acquisition-related consulting, transaction and integration costs (net of recoveries) and Toronto transition costs (recoveries), impairment charges, other solar charges, and refund interest income with respect to amounts previously held on account with Canadian tax authorities. During the fourth quarter of 2017, we recorded $1.6 million of Toronto transition costs. We expect these costs to continue into 2019. The Toronto transition costs are reported as other charges.

(2) The adjustments for taxes, as applicable, represent the tax effects on our non-IFRS adjustments and tax write-offs/costs or recoveries related to restructured sites (described below).

The following table sets forth a reconciliation of our IFRS tax expense and IFRS effective tax rate to our non-IFRS adjusted tax expense and our non-IFRS adjusted effective tax rate for the periods indicated, in each case determined by excluding the tax benefits or costs associated with the listed items (in millions, except percentages) from our IFRS tax expense for such periods:

	Three months ended December 31				Year ended December 31			
	2016	Effective tax rate	2017	Effective tax rate	2016	Effective tax rate	2017	Effective tax rate
IFRS tax expense/IFRS effective tax rate	$ 8.4	29%	$ 7.7	35%	$ 24.7	15%	$ 27.4	21%
Tax costs (benefits) of the following items excluded from IFRS tax expense:								
Employee stock-based compensation	(0.5)		0.9		0.9		1.7	
Amortization of intangible assets (excluding computer software)	—		—		—		—	
Net restructuring, impairment and other charges	0.1		(0.2)		0.4		1.2	
Other solar charges (inventory and A/R write-down)	—		—		—		0.4	
Other charges related to restructured sites	(0.5)		—		(1.4)		3.4	
Non-IFRS adjusted tax expense/Non-IFRS adjusted effective tax rate	$ 7.5	11%	$ 8.4	17%	$ 24.6	11%	$ 34.1	17%

(3) Management uses non-IFRS free cash flow as a measure, in addition to IFRS cash flow provided by (used in) operations, to assess our operational cash flow performance. We believe non-IFRS free cash flow provides another level of transparency to our liquidity. Non-IFRS free cash flow is defined as cash provided by (used in) operations after the purchase of property, plant and equipment (net of proceeds from the sale of certain surplus equipment and property), finance lease payments, repayments from a former solar supplier, and finance costs paid. As a measure of liquidity, in periods when it is relevant (the third quarter of 2015), non-IFRS free cash flow also included deposits received on the anticipated sale of real property (see note 18 to our 2017 audited consolidated financial statements). Similarly, it is our intention to include any amounts received from the purchasers of our Toronto real property (should the sale be consummated) in non-IFRS free cash flow in the period of receipt. Note that non-IFRS free cash flow, however, does not represent residual cash flow available to Celestica for discretionary expenditures.

(4) Management uses non-IFRS adjusted ROIC as a measure to assess the effectiveness of the invested capital we use to build products or provide services to our customers, by quantifying how well we generate earnings relative to the capital we have invested in our business. Our non-IFRS adjusted ROIC measure reflects non-IFRS operating earnings, working capital management and asset utilization. Non-IFRS adjusted ROIC is calculated by dividing non-IFRS adjusted EBIAT by average net invested capital. Net invested capital (calculated in the table below) consists of the following IFRS measures: total assets less cash, accounts payable, accrued and other current liabilities and provisions, and income taxes payable. We use a two-point average to calculate average net invested capital for the quarter and a five-point average to calculate average net invested capital for the year. A comparable measure under IFRS would be determined by dividing IFRS earnings before income taxes by net invested capital (which we have set forth in the charts above and below), however, this measure (which we have called IFRS ROIC), is not a measure defined under IFRS.

The following table sets forth, for the periods indicated, our calculation of IFRS ROIC % and non-IFRS adjusted ROIC % (in millions, except IFRS ROIC % and non-IFRS adjusted ROIC %):

	Three months ended December 31		Year ended December 31	
	2016	2017	2016	2017
IFRS earnings before income taxes	$ 29.3	$ 22.1	$ 161.0	$ 132.4
Multiplier	4	4	1	1
Annualized IFRS earnings before income taxes	$ 117.2	$ 88.4	$ 161.0	$ 132.4
Average net invested capital for the period	$ 1,083.8	$ 1,196.3	$ 1,062.3	$ 1,133.1
IFRS ROIC % [(1)]	10.8%	7.4%	15.2%	11.7%

	Three months ended December 31		Year ended December 31	
	2016	2017	2016	2017
Non-IFRS operating earnings (adjusted EBIAT)	$ 61.4	$ 50.7	$ 221.2	$ 216.5
Multiplier	4	4	1	1
Annualized non-IFRS adjusted EBIAT	$ 245.6	$ 202.8	$ 221.2	$ 216.5
Average net invested capital for the period	$ 1,083.8	$ 1,196.3	$ 1,062.3	$ 1,133.1
Non-IFRS adjusted ROIC % [(1)]	22.7%	17.0%	20.8%	19.1%

	December 31 2016	March 31 2017	June 30 2017	September 30 2017	December 31 2017
Net invested capital consists of:					
Total assets	$ 2,822.3	$ 2,814.6	$ 2,857.7	$ 2,871.7	$ 2,944.7
Less: cash	557.2	558.0	582.7	527.0	515.2
Less: accounts payable, accrued and other current liabilities, provisions and income taxes payable	1,189.7	1,165.5	1,168.4	1,152.7	1,228.9
Net invested capital at period end [(1)]	$ 1,075.4	$ 1,091.1	$ 1,106.6	$ 1,192.0	$ 1,200.6

	December 31 2015	March 31 2016	June 30 2016	September 30 2016	December 31 2016
Net invested capital consists of:					
Total assets	$ 2,612.0	$ 2,621.9	$ 2,720.1	$ 2,813.7	$ 2,822.3
Less: cash	545.3	511.5	472.9	542.0	557.2
Less: accounts payable, accrued and other current liabilities, provisions and income taxes payable	1,104.3	1,053.8	1,122.5	1,179.4	1,189.7
Net invested capital at period end [(1)]	$ 962.4	$ 1,056.6	$ 1,124.7	$ 1,092.3	$ 1,075.4

(1) See footnote 4 of the previous table.

Recently issued accounting pronouncements:

IFRS 15, Revenue from Contracts with Customers:

In May 2014, the IASB issued this standard, which provides a single, principles-based five-step model for revenue recognition to be applied to all customer contracts, and requires enhanced disclosures. The new standard is effective for annual periods beginning on or after January 1, 2018, and allows for early adoption. We adopted this standard on January 1, 2018, and have elected to use the retrospective approach, pursuant to which we will restate each relevant comparative reporting periods presented and recognize the transitional adjustments through equity at the start of the first comparative reporting period to be presented in our quarterly and annual consolidated financial statements (which will be January 1, 2016 for our annual financial statements). The new standard will change the timing of our revenue recognition for a significant portion of our business, resulting in the recognition of revenue for certain customer contracts earlier than under the previous recognition rules (which was generally upon delivery). The new standard will materially impact our consolidated financial statements, primarily in relation to inventory and accounts receivable balances.

We currently estimate the following impacts under the new standard (in millions):

	January 1 2016	December 31 2016	Year ended December 31, 2016
		Increase (decrease)	
Accounts receivable/Contract asset	$ 197	$ 227	$ —
Inventories	(178)	(206)	—
Deferred taxes	(2)	(2)	—
Deficit	(17)	(19)	—
Revenue	—	—	30
Cost of sales	—	—	28
Net earnings	—	—	2

We are currently analyzing and will disclose the anticipated extent of the financial impact of the new standard on the specific line items above as of December 31, 2017 and for the year ended December 31, 2017 when our analysis is completed. We have made the necessary changes to our business processes, systems and controls to support the recognition and disclosures required for the new standard.

IFRS 9, Financial Instruments:

In July 2014, the IASB issued a final version of this standard, which replaces IAS 39, *Financial Instruments: Recognition and Measurement*, and is effective for annual periods beginning on or after January 1, 2018, with earlier adoption permitted. The standard introduces a new model for the classification and measurement of financial assets, a single expected credit loss model for the measurement of the impairment of financial assets, and a new model for hedge accounting that is aligned with a company's risk management activities. We adopted this standard effective January 1, 2018. The adoption of this standard will not have a material impact on our consolidated financial statements.

IFRS 16, Leases:

In January 2016, the IASB issued this standard, which brings most leases on-balance sheet for lessees under a single model, eliminating the distinction between operating and finance leases. IFRS 16 supersedes IAS 17, *Leases*, and related interpretations and is effective for periods beginning on or after January 1, 2019, with earlier adoption permitted. We do not intend to adopt this standard early. We have established a project team to evaluate the anticipated impact of this standard on our consolidated financial statements, as well as any changes to our business processes, systems and controls that may be required to support the recognition and disclosures required by the new standard. Transition efforts are currently underway, and are anticipated to be complete by January 1, 2019.