CONSTELLATION SOFTWARE INC.

MANAGEMENT'S DISCUSSION AND ANALYSIS ("MD&A")

The following discussion and analysis should be read in conjunction with the Annual Consolidated Financial Statements for the year ended December 31, 2018, which were prepared in accordance with International Financial Reporting Standards ("IFRS"). Certain information included herein is forward-looking and based upon assumptions and anticipated results that are subject to uncertainties. Should one or more of these uncertainties materialize or should the underlying assumptions prove incorrect, actual results may vary significantly from those expected. See "Forward-Looking Statements" and "Risks and Uncertainties".

Unless otherwise indicated, all dollar amounts are expressed in U.S. dollars. All references to "$" are to U.S. dollars and all references to "C$" are to Canadian dollars. Certain totals, subtotals and percentages may not reconcile due to rounding.

Additional information about Constellation Software Inc. (the "Company" or "Constellation"), including our most recently filed Annual Information Form ("AIF"), is available on SEDAR at www.sedar.com.

Forward Looking Statements

Certain statements in this report may contain "forward looking" statements that involve risks, uncertainties and other factors that may cause the actual results, performance or achievements of the Company or industry to be materially different from any future results, performance or achievements expressed or implied by such forward-looking statements. Words such as "may", "will", "expect", "believe", "plan", "intend", "should", "anticipate" and other similar terminology are intended to identify forward looking statements. These statements reflect current assumptions and expectations regarding future events and operating performance as of the date of this MD&A, February 13, 2019. Forward looking statements involve significant risks and uncertainties, should not be read as guarantees of future performance or results, and will not necessarily be accurate indications of whether or not such results will be achieved. A number of factors could cause actual results to vary significantly from the results discussed in the forward looking statements, including, but not limited to, the factors discussed under "Risks and Uncertainties". Although the forward looking statements contained in this MD&A are based upon what management of the Company believes are reasonable assumptions, the Company cannot assure investors that actual results will be consistent with these forward looking statements. These forward looking statements are made as of the date of this MD&A and the Company assumes no obligation, except as required by law, to update any forward looking statements to reflect new events or circumstances. This report should be viewed in conjunction with the Company's other publicly available filings, copies of which can be obtained electronically on SEDAR at www.sedar.com.

Non-IFRS Measures

This MD&A includes certain measures which have not been prepared in accordance with IFRS such as Adjusted EBITA, Adjusted EBITA margin, Adjusted net income, and Adjusted net income margin.

The term ''Adjusted EBITA'' refers to net income before adjusting for finance and other expense (income), bargain purchase gain, finance costs, income taxes, share in net income or loss of equity investees, impairment of non-financial assets, amortization, TSS membership liability revaluation charge, and foreign exchange gain or loss. The Company believes that Adjusted EBITA is useful supplemental information as it provides an indication of the results generated by the Company's main business activities prior to taking into consideration how those activities are financed and taxed and also prior to taking into consideration intangible asset amortization and the other items listed above. ''Adjusted EBITA margin'' refers to the percentage that Adjusted EBITA for any period represents as a portion of total revenue for that period.

‘‘Adjusted net income’’ means net income adjusted for non-cash expenses (income) such as amortization of intangible assets, deferred income taxes, the Total Specific Solutions (TSS) B.V. (“TSS”) membership liability revaluation charge, bargain purchase gains, and certain other expenses (income), and excludes the portion of the adjusted net income of TSS attributable to the minority owners of TSS (see “Capital Resources and Commitments” section). The Company believes that Adjusted net income is useful supplemental information as it provides an indication of the results generated by the Company’s main business activities prior to taking into consideration amortization of intangible assets, deferred income taxes, the TSS membership liability revaluation charge, bargain purchase gains, and certain other non-cash expenses (income) incurred or recognized by the Company from time to time, and adjusts for the portion of TSS’ Adjusted net income not attributable to shareholders of Constellation. ‘‘Adjusted net income margin’’ refers to the percentage that Adjusted net income for any period represents as a portion of total revenue for that period.

Adjusted EBITA and Adjusted net income are not recognized measures under IFRS and, accordingly, readers are cautioned that Adjusted EBITA and Adjusted net income should not be construed as alternatives to net income determined in accordance with IFRS. The Company’s method of calculating Adjusted EBITA and Adjusted net income may differ from other issuers and, accordingly, Adjusted EBITA and Adjusted net income may not be comparable to similar measures presented by other issuers. See ‘‘Results of Operations —Adjusted EBITA’’ and ‘‘— Adjusted net income’’ for a reconciliation of Adjusted EBITA and Adjusted net income to Net income. Adjusted EBITA includes 100% of the Adjusted EBITA of TSS.

Overview

We acquire, manage and build vertical market software (“VMS”) businesses. Generally, these businesses provide mission critical software solutions that address the specific needs of our customers in particular markets. Our focus on acquiring businesses with growth potential, managing them well and then building them, has allowed us to generate significant cash flows and revenue growth during the past several years.

Our revenue consists primarily of software license fees, maintenance and other recurring fees, professional service fees and hardware sales. Software license revenue is comprised of license fees charged for the use of our software products generally licensed under multiple-year or perpetual arrangements. Maintenance and other recurring revenue primarily consists of fees charged for customer support on our software products post-delivery and also includes, to a lesser extent, recurring fees derived from software as a service, subscriptions, combined software/support contracts, transaction-related revenues, and hosted products. Maintenance and other recurring fee arrangements generally include ongoing customer support and rights to certain product updates “when and if available” and products sold on a subscription basis. Professional service revenue consists of fees charged for implementation and integration services, customized programming, product training and consulting. Hardware sales include the resale of third party hardware that forms part of our customer solutions, as well as sales of customized hardware assembled internally. Our customers typically purchase a combination of software, maintenance, professional services and hardware, although the type, mix and quantity of each vary by customer and by product.

Expenses consist primarily of staff costs, the cost of hardware, third party licenses, maintenance and professional services to fulfill our customer arrangements, travel and occupancy costs and other general operating expenses.

Results of Operations

(In millions of dollars, except percentages and per share amounts)

Unaudited

	Three months ended December 31, 2018	Three months ended December 31, 2017	Period-Over-Period Change $	Period-Over-Period Change %	Year ended December 31, 2018	Year ended December 31, 2017	Period-Over-Period Change $	Period-Over-Period Change %	Year ended Dec. 31, 2016
Revenue	**830.5**	**687.6**	**142.9**	**21%**	**3,060.1**	**2,479.4**	**580.7**	**23%**	**2,125.1**
Expenses	604.4	512.9	91.5	18%	2,303.4	1,858.2	445.2	24%	1,595.1
Adjusted EBITA	**226.1**	**174.7**	**51.4**	**29%**	**756.7**	**621.2**	**135.5**	**22%**	**530.0**
Adjusted EBITA margin	27%	25%			25%	25%			25%
Amortization of intangible assets	70.0	62.6	7.4	12%	278.8	230.5	48.3	21%	190.6
Foreign exchange (gain) loss	(6.2)	(2.3)	(3.9)	170%	(3.1)	8.6	(11.7)	NM	26.0
TSS membership liability revaluation charge	17.6	9.6	8.0	83%	55.2	49.9	5.3	11%	21.6
Finance and other income	(3.6)	(1.6)	(2.0)	125%	(17.0)	(3.5)	(13.5)	386%	(16.2)
Bargain purchase gain	(67.9)	(4.9)	(63.0)	NM	(68.5)	(9.9)	(58.6)	592%	-
Finance costs	7.8	5.3	2.5	47%	25.9	24.8	1.1	4%	21.6
Income before income taxes	208.4	106.0	102.4	97%	485.4	320.8	164.6	51%	286.4
Income taxes expense (recovery)									
Current income tax expense (recovery)	33.5	26.3	7.2	27%	126.6	106.5	20.1	19%	84.9
Deferred income tax expense (recovery)	(4.1)	3.4	(7.5)	NM	(20.5)	(7.6)	(12.9)	170%	(5.3)
Income tax expense (recovery)	29.4	29.7	(0.3)	-1%	106.1	98.9	7.2	7%	79.6
Net income	**179.0**	**76.3**	**102.7**	**135%**	**379.3**	**221.9**	**157.4**	**71%**	**206.8**
Adjusted net income	**187.3**	**140.8**	**46.5**	**33%**	**597.0**	**462.8**	**134.2**	**29%**	**395.0**
Adjusted net income margin	23%	20%			20%	19%			19%
Weighted average number of shares outstanding									
Basic and diluted	21.2	21.2			21.2	21.2			21.2
Net income per share									
Basic and diluted	$ 8.45	$ 3.60	$ 4.85	135%	$ 17.90	$ 10.47	$ 7.43	71%	$ 9.76
Adjusted EBITA per share									
Basic and diluted	$ 10.67	$ 8.24	$ 2.43	29%	$ 35.71	$ 29.31	$ 6.39	22%	$ 25.01
Adjusted net income per share									
Basic and diluted	$ 8.84	$ 6.64	$ 2.19	33%	$ 28.17	$ 21.84	$ 6.33	29%	$ 18.64
Cash dividends declared per share									
Basic and diluted	$ 1.00	$ 1.00	$ -	0%	$ 4.00	$ 4.00	$ -	0%	$ 4.00
Total assets					2,935.4	2,288.2	647.2	28%	1,883.5
Total long-term liabilities					725.2	512.1	213.1	42%	552.8

NM - Not meaningful

Comparison of the three and twelve month periods ended December 31, 2018 and 2017

Revenue:

Total revenue for the quarter ended December 31, 2018 was $830.5 million, an increase of 21%, or $142.9 million, compared to $687.6 million for the comparable period in 2017. For the 2018 fiscal year total revenues were $3,060.1 million, an increase of 23%, or $580.7 million, compared to $2,479.4 million for the 2017 fiscal year. The increase for both the three and twelve month periods compared to the same periods in the prior year is primarily attributable to growth from acquisitions as the Company experienced organic growth of 2% in both periods, 3% and 1% respectively after adjusting for the impact of changes in the valuation of the US dollar against most major currencies in which the Company transacts business. For acquired companies, organic growth is calculated as the difference between actual revenues achieved by each company in the financial period following acquisition compared to the estimated revenues they achieved in the corresponding financial period preceding the date of acquisition by Constellation. The Company adopted IFRS 15 "Revenue from contracts with customers" ("IFRS 15") effective January 1, 2018 utilizing the cumulative effect method. Under the cumulative effect method comparative periods have not been restated; however, the quantitative differences between reported results under IFRS 15 and those that would have been reported under IAS 11 and IAS 18 ("prior IFRS") have been disclosed. For the three and twelve months ended December 31, 2018 total revenue was $2.8 million lower and $3.8 million higher respectively than it would have been under prior IFRS. The organic growth figures included above and below exclude the impact of IFRS 15.

The following table displays the breakdown of our revenue according to revenue type:

	Three months ended December 31,		Period-Over-Period Change		Q417 Proforma Adj. (Note 1)	Q418 IFRS 15 Adj. (Note 2)	Organic Growth	Year ended December 31,		Period-Over-Period Change		FY17 Proforma Adj. (Note 3)	FY18 IFRS 15 Adj. (Note 4)	Organic Growth
	2018	2017	$	%	$	$	%	2018	2017	$	%	$	$	%
	($M, except percentages)							($M, except percentages)						
Licenses	57.4	49.9	7.5	15%	9.8	0.7	-3%	198.3	170.4	27.9	16%	33.5	(4.8)	-5%
Professional services	172.8	139.6	33.2	24%	31.8	-	1%	615.6	498.2	117.4	24%	115.2	0.2	0%
Hardware and other	58.2	50.4	7.8	15%	5.7	-	4%	174.6	167.6	7.0	4%	26.6	-	-10%
Maintenance and other recurring	542.1	447.7	94.4	21%	84.4	2.1	2%	2,071.6	1,643.2	428.4	26%	335.7	0.8	5%
	830.5	687.6	142.9	21%	131.7	2.8	2%	3,060.1	2,479.4	580.7	23%	511.0	(3.8)	2%

$M - Millions of dollars

Note 1: Estimated pre-acquisition revenues for the three months ended December 31, 2017 from companies acquired after September 30, 2017. (Obtained from unaudited vendor financial information.)

Note 2: Adjustment required to revenue figures for the three months ended December 31, 2018 to reverse the impact of adopting IFRS 15.

Note 3: Estimated pre-acquisition revenues for the fiscal year ended December 31, 2017 from companies acquired after December 31, 2016. (Obtained from unaudited vendor financial information.)

Note 4: Adjustment required to revenue figures for the fiscal year ended December 31, 2018 to reverse the impact of adopting IFRS 15.

For comparative purposes the table below shows the quarterly organic growth as compared to the same period in the prior year by revenue type since Q4 2016.

	Quarter Ended								
	Dec. 31 2016	Mar. 31 2017	Jun. 30 2017	Sep. 30 2017	Dec. 31 2017	Mar. 31 2018	Jun. 30 2018	Sep. 30 2018	Dec. 31 2018
Licenses	-1%	-13%	-6%	2%	6%	-4%	-5%	-9%	-3%
Professional services	1%	2%	-3%	3%	7%	3%	3%	-5%	1%
Hardware and other	-29%	0%	1%	1%	17%	-16%	-11%	-20%	4%
Maintenance and other recurring	3%	3%	2%	5%	7%	8%	6%	3%	2%
Revenue	**-1%**	**1%**	**1%**	**4%**	**8%**	**5%**	**4%**	**-1%**	**2%**

The following table shows the same information adjusting for the impact of foreign exchange movements.

	Quarter Ended								
	Dec. 31 2016	Mar. 31 2017	Jun. 30 2017	Sep. 30 2017	Dec. 31 2017	Mar. 31 2018	Jun. 30 2018	Sep. 30 2018	Dec. 31 2018
Licenses	0%	-13%	-4%	1%	3%	-8%	-7%	-7%	-1%
Professional services	2%	3%	-1%	1%	3%	-3%	0%	-4%	3%
Hardware and other	-28%	2%	2%	0%	14%	-20%	-13%	-19%	5%
Maintenance and other recurring	5%	4%	4%	3%	4%	4%	4%	4%	4%
Revenue	**1%**	**3%**	**2%**	**2%**	**5%**	**0%**	**1%**	**0%**	**3%**

We aggregate our business into two distinct segments for financial reporting purposes: (i) the public sector reportable segment, which includes business units focused primarily on government and government-related customers, and (ii) the private sector reportable segment, which includes business units focused primarily on commercial customers. Following the guidance set out by IFRS 8, the public sector reportable segment is derived by combining our Volaris, Harris and TSS operating groups, and the private sector reportable segment is derived by combining our Vela, Jonas and Perseus operating groups. Each of our operating groups operate essentially as mini Constellation's, conglomerates of small vertical market software companies with similar economic characteristics. While the operating groups in the public sector are comprised of businesses that primarily serve government and government-related customers, they also include businesses that serve commercial customers, and similarly the operating groups in the private sector are comprised of businesses that primarily serve commercial customers but also include businesses that serve government and government-related customers. For the fiscal years ended December 31, 2017 and 2018 approximately 23% and 30% respectively of the revenue in in the public sector reportable segment is generated from commercial customers, and 13% and 16% respectively of revenue in the private sector reportable segment is generated from government and government-related customers. We continue to report two distinct segments as we believe the information is useful to shareholders.

The following table displays our revenue by reportable segment and the percentage change for the three and twelve months ended December 31, 2018 compared to the same periods in 2017:

	Three months ended December 31, 2018	Three months ended December 31, 2017	Period-Over-Period Change $	Period-Over-Period Change %	Q417 Proforma Adj. (Note 1) $	Q418 IFRS 15 Adj. (Note 2) $	Organic Growth %
	($M, except percentages)						
Public Sector							
Licenses	33.0	31.8	1.2	4%	6.9	1.0	-12%
Professional services	131.8	111.6	20.2	18%	23.1	-	-2%
Hardware and other	51.4	42.5	8.9	21%	3.0	-	13%
Maintenance and other recurring	339.8	286.7	53.1	19%	50.5	2.2	1%
	556.0	472.6	83.4	18%	83.5	3.2	1%
Private Sector							
Licenses	24.4	18.1	6.3	35%	2.9	(0.3)	15%
Professional services	41.0	28.0	13.0	46%	8.7	-	12%
Hardware and other	6.8	7.9	(1.1)	-14%	2.7	-	-36%
Maintenance and other recurring	202.3	161.0	41.3	26%	33.8	(0.1)	4%
	274.5	215.0	59.5	28%	48.1	(0.4)	4%

	Year ended December 31, 2018	Year ended December 31, 2017	Period-Over-Period Change $	Period-Over-Period Change %	FY17 Proforma Adj. (Note 3) $	FY18 IFRS 15 Adj. (Note 4) $	Organic Growth %
	($M, except percentages)						
Public Sector							
Licenses	120.9	106.8	14.1	13%	23.7	(3.2)	-10%
Professional services	471.1	398.2	72.9	18%	83.6	0.2	-2%
Hardware and other	146.4	138.6	7.8	6%	14.0	-	-4%
Maintenance and other recurring	1,309.1	1,045.6	263.5	25%	210.9	0.6	4%
	2,047.5	1,689.2	358.3	21%	332.2	(2.4)	1%
Private Sector							
Licenses	77.4	63.6	13.8	22%	9.9	(1.6)	3%
Professional services	144.5	100.0	44.5	45%	31.5	-	10%
Hardware and other	28.2	29.0	(0.8)	-3%	12.6	-	-32%
Maintenance and other recurring	762.5	597.6	164.9	28%	124.8	0.2	6%
	1,012.6	790.2	222.4	28%	178.8	(1.4)	4%

Certain totals and percentages may not reconcile due to rounding.

Note 1: Estimated pre-acquisition revenues for the three months ended December 31, 2017 from companies acquired after September 30, 2017. (Obtained from unaudited vendor financial information.)

Note 2: Adjustment required to revenue figures for the three months ended December 31, 2018 to reverse the impact of adopting IFRS 15.

Note 3: Estimated pre-acquisition revenues for the fiscal year ended December 31, 2017 from companies acquired after December 31, 2016. (Obtained from unaudited vendor financial information.)

Note 4: Adjustment required to revenue figures for the fiscal year ended December 31, 2018 to reverse the impact of adopting IFRS 15.

Public Sector

For the quarter ended December 31, 2018, total revenue in the public sector reportable segment increased 18%, or $83.4 million to $556.0 million, compared to $472.6 million for the quarter ended December 31, 2017. For the fiscal year ended December 31, 2018, total revenue increased by 21%, or $358.3 million to $2,047.5 million, compared to $1,689.2 million for the comparable period in 2017. For purposes of calculating organic growth, estimated pre-acquisition revenues included from the relevant companies acquired in 2017 and 2018 was $83.5 million and $332.2 million for the three and twelve month periods ended December 31, 2017, respectively. For the three and twelve months ended December 31, 2018 total revenue was respectively $3.2 million lower and $2.4 million higher than it would have been under prior IFRS. Organic revenue growth was 1% for both the three and twelve months ended December 31, 2018 compared to the same periods in 2017, and 2% and 0% respectively after adjusting for the impact of changes in the valuation of the US dollar against most major currencies in which the Company transacts business. Organic growth excludes the impact of IFRS 15.

For comparative purposes the table below shows the quarterly organic growth as compared to the same period in the prior year by revenue type since Q4 2016 adjusting for the impact of foreign exchange movements.

	Quarter Ended								
	Dec. 31 2016	Mar. 31 2017	Jun. 30 2017	Sep. 30 2017	Dec. 31 2017	Mar. 31 2018	Jun. 30 2018	Sep. 30 2018	Dec. 31 2018
Licenses	-2%	-17%	-11%	0%	0%	-9%	-10%	-11%	-11%
Professional services	2%	4%	0%	2%	3%	-3%	-5%	-6%	0%
Hardware and other	-31%	4%	3%	2%	19%	-12%	-7%	-17%	14%
Maintenance and other recurring	5%	4%	4%	3%	4%	3%	4%	3%	3%
Revenue	**0%**	**3%**	**2%**	**3%**	**5%**	**-1%**	**0%**	**-2%**	**2%**

Private Sector

For the quarter ended December 31, 2018, total revenue in the private sector reportable segment increased 28%, or $59.5 million to $274.5 million, compared to $215.0 million for the quarter ended December 31, 2017. For the fiscal year ended December 31, 2018, total revenue increased by 28%, or $222.4 million to $1,012.6 million, compared to $790.2 million for the comparable period in 2017. For purposes of calculating organic growth, estimated pre-acquisition revenues included from the relevant companies acquired in 2017 and 2018 was $48.1 million and $178.8 million for the three and twelve month periods ended December 31, 2017, respectively. For the three and twelve months ended December 31, 2018 total revenue was respectively $0.4 million and $1.4 million higher than it would have been under prior IFRS. Organic revenue growth was 4% for both the three and twelve months ended December 31, 2018 compared to the same periods in 2017, and 6% and 4% respectively after adjusting for the impact of changes in the valuation of the US dollar against most major currencies in which the Company transacts business. Organic growth excludes the impact of IFRS 15.

For comparative purposes the table below shows the quarterly organic growth as compared to the same period in the prior year by revenue type since Q4 2016 adjusting for the impact of foreign exchange movements.

	Quarter Ended								
	Dec. 31 2016	Mar. 31 2017	Jun. 30 2017	Sep. 30 2017	Dec. 31 2017	Mar. 31 2018	Jun. 30 2018	Sep. 30 2018	Dec. 31 2018
Licenses	4%	-5%	8%	1%	11%	-6%	-1%	-1%	18%
Professional services	2%	2%	-3%	-4%	6%	-1%	16%	6%	15%
Hardware and other	-9%	-4%	-5%	-11%	-5%	-41%	-33%	-25%	-34%
Maintenance and other recurring	4%	4%	4%	3%	4%	6%	5%	6%	6%
Revenue	**3%**	**3%**	**3%**	**1%**	**5%**	**2%**	**4%**	**4%**	**6%**

Expenses:

The following table displays the breakdown of our expenses:

	Three months ended December 31, 2018	2017	Period-Over-Period Change $	%	Year ended December 31, 2018	2017	Period-Over-Period Change $	%
	($M, except percentages)				($M, except percentages)			
Expenses								
Staff	401.7	338.1	63.6	19%	1,565.1	1,236.9	328.2	27%
Hardware	31.7	29.1	2.6	9%	95.9	92.7	3.2	3%
Third party license, maintenance and professional services	70.8	57.0	13.8	24%	264.7	212.6	52.1	25%
Occupancy	19.8	15.4	4.4	29%	78.2	58.9	19.3	33%
Travel, Telecommunications, Supplies & Software and equipment	50.0	43.9	6.1	14%	181.1	154.6	26.5	17%
Professional fees	10.9	9.7	1.2	12%	39.1	31.3	7.8	25%
Other, net	12.5	13.5	(1.0)	-7%	52.3	48.6	3.7	8%
Depreciation	7.0	6.2	0.8	13%	27.0	22.6	4.4	19%
	604.4	512.9	91.5	18%	2,303.4	1,858.2	445.2	24%

Overall expenses for the quarter ended December 31, 2018 increased 18%, or $91.5 million to $604.4 million, compared to $512.9 million during the same period in 2017. As a percentage of total revenue, expenses decreased to 73% for the quarter ended December 31, 2018 from 75% for the same period in 2017. During the fiscal year ended December 31, 2018, expenses increased 24%, or $445.2 million to $2,303.4 million, compared to $1,858.2 million during the same period in 2017. As a percentage of total revenue, expenses were 75% for the fiscal year ended December 31, 2018 and 75% for the same period in 2017. The change in valuation of the US dollar against most major currencies in which the Company transacts business resulted in an approximate 2% decrease in expenses for the three months ended December 31, 2018 and an approximate 1% increase in expenses for the fiscal year ended December 31, 2018 compared to the comparable periods of 2017.

Staff expense – Staff expenses increased 19% or $63.6 million for the quarter ended December 31, 2018 and 27% or $328.2 million for the fiscal year ended December 31, 2018 over the same periods in 2017. Staff expense can be broken down into five key operating departments: Professional Services, Maintenance, Research and Development, Sales and Marketing, and General and Administrative. Included within staff expenses for each of the above five departments are personnel and related costs associated with providing the necessary services. The table below compares the period over period variances.

	Three months ended December 31, 2018	2017	Period-Over-Period Change $	%	Year ended December 31, 2018	2017	Period-Over-Period Change $	%
	($M, except percentages)				($M, except percentages)			
Professional services	88.7	72.8	15.9	22%	341.0	270.1	70.9	26%
Maintenance	82.7	67.3	15.4	23%	326.7	251.4	75.3	30%
Research and development	105.9	92.5	13.4	14%	420.7	341.4	79.3	23%
Sales and marketing	56.9	50.3	6.6	13%	219.5	180.9	38.6	21%
General and administrative	67.5	55.2	12.3	22%	257.2	193.1	64.1	33%
	401.7	338.1	63.6	19%	1,565.1	1,236.9	328.2	27%

The increase in staff expenses for the three and twelve months ended December 31, 2018 was primarily due to the growth in the number of employees compared to the same periods in 2017 primarily due to acquisitions.

Hardware expenses – Hardware expenses increased 9% or $2.6 million for the quarter ended December 31, 2018 and 3% or $3.2 million for the fiscal year ended December 31, 2018 over the same periods in 2017 as compared with the 15% and 4% increase in hardware and other revenue for the three and twelve month periods ended December 31, 2018 respectively over the comparable periods in 2017. Hardware margins for the three and twelve months ended December 31, 2018 were 46% and 45% respectively as compared to 42% and 45% for the comparable periods in 2017.

Third party license, maintenance and professional services expenses – Third party license, maintenance and professional services expenses increased 24% or $13.8 million for the quarter ended December 31, 2018 and 25% or $52.1 million for the fiscal year ended December 31, 2018 over the same periods in 2017. The increase is primarily due to third party license, maintenance and professional services expenses of acquired businesses.

Occupancy expenses – Occupancy expenses increased 29% or $4.4 million for the quarter ended December 31, 2018 and 33% or $19.3 million for the fiscal year ended December 31, 2018 over the same periods in 2017. The increase in occupancy expenses is primarily due to the occupancy expenses of acquired businesses.

Travel, Telecommunications, Supplies & Software and equipment expenses – Travel, Telecommunications, Supplies & Software and equipment expenses increased 14% or $6.1 million for the quarter ended December 31, 2018 and 17% or $26.5 million for the fiscal year ended December 31, 2018 over the same periods in 2017. The increase in these expenses is primarily due to expenses incurred by acquired businesses.

Professional fees – Professional fees increased 12% or $1.2 million for the quarter ended December 31, 2018 and 25% or $7.8 million for the fiscal year ended December 31, 2018 over the same periods in 2018. There are no individually material reasons contributing to this variance.

Other, net – Other expenses decreased 7% or $1.0 million for the quarter ended December 31, 2018 and increased 8% or $3.7 million for the fiscal year ended December 31, 2018 over the same periods in 2017. The following table provides a further breakdown of expenses within this category.

	Three months ended December 31,		Period-Over-Period Change		Year ended December 31,		Period-Over-Period Change	
	2018	2017	$	%	2018	2017	$	%
	($M, except percentages)				($M, except percentages)			
Advertising and promotion	11.4	10.0	1.4	14%	42.6	32.3	10.3	32%
Recruitment and training	4.9	3.6	1.3	36%	17.3	12.6	4.7	37%
Bad debt expense	1.4	0.7	0.7	100%	3.6	4.7	(1.1)	-23%
R&D tax credits	(5.4)	(6.6)	1.2	-18%	(21.3)	(17.4)	(3.9)	22%
Contingent consideration	(3.6)	1.9	(5.5)	NM	(2.3)	6.0	(8.3)	NM
Other expense, net	3.8	3.9	(0.1)	-3%	12.4	10.4	2.0	19%
	12.5	13.5	(1.0)	-7%	52.3	48.6	3.7	8%

NM - Not meaningful

The contingent consideration expense amounts recorded for the periods above relate to an increase (decrease) in anticipated acquisition earnout payment accruals primarily as a result of increases (decreases) to revenue forecasts for the associated acquisitions. Revenue forecasts are updated on a quarterly basis and the related anticipated acquisition earnout payment accruals are updated accordingly. The advertising and promotion expense increase is primarily due to expenses incurred by acquired businesses. There are no individually material reasons contributing to the remaining variances.

Depreciation – Depreciation of property and equipment increased 13% or $0.8 million for the quarter ended December 31, 2018 and 19% or $4.4 million for the fiscal year ended December 31, 2018 over the same periods in 2017. The increase is primarily due to the depreciation expense associated with acquired businesses.

Other Income and Expenses:

The following table displays the breakdown of our other income and expenses:

	Three months ended December 31,		Period-Over-Period Change		Year ended December 31,		Period-Over-Period Change	
	2018	2017	$	%	2018	2017	$	%
	($M, except percentages)				($M, except percentages)			
Amortization of intangible assets	70.0	62.6	7.4	12%	278.8	230.5	48.3	21%
Foreign exchange (gain) loss	(6.2)	(2.3)	(3.9)	170%	(3.1)	8.6	(11.7)	NM
TSS membership liability revaluation charge	17.6	9.6	8.0	83%	55.2	49.9	5.3	11%
Finance and other expense (income)	(3.6)	(1.6)	(2.0)	125%	(17.0)	(3.5)	(13.5)	386%
Bargain purchase gain	(67.9)	(4.9)	(63.0)	NM	(68.5)	(9.9)	(58.6)	592%
Finance costs	7.8	5.3	2.5	47%	25.9	24.8	1.1	4%
Income tax expense (recovery)	29.4	29.7	(0.3)	-1%	106.1	98.9	7.2	7%
	47.1	98.4	(51.3)	-52%	377.4	399.3	(21.9)	-5%

NM - Not meaningful

Amortization of intangible assets – Amortization of intangible assets increased 12% or $7.4 million for the quarter ended December 31, 2018 and 21% or $48.3 million for the fiscal year ended December 31, 2018 over the same periods in 2017. The increase in amortization expense for the three and twelve months ended December 31, 2018 is primarily attributable to an increase in the carrying amount of our intangible asset balance over the twelve-month period ended December 31, 2018 as a result of acquisitions completed during this twelve-month period.

Foreign exchange – Most of our businesses are organized geographically so many of our expenses are incurred in the same currency as our revenues, which mitigates some of our exposure to currency fluctuations. For the three and twelve months ended December 31, 2018, we realized foreign exchange gains of $6.2 million and $3.1 million respectively compared to a gain of $2.3 million and loss of $8.6 million for the same periods in 2017. The following table provides a breakdown of these amounts.

	Three months ended December 31,		Period-Over-Period Change		Year ended December 31,		Period-Over-Period Change	
	2018	2017	$	%	2018	2017	$	%
	($M, except percentages)				($M, except percentages)			
Unrealized foreign exchange (gain) loss related to:								
- revaluation of intercompany loans between entities with differing functional currencies (1)	3.6	(1.4)	5.0	NM	12.6	(13.1)	25.7	NM
- revaulation of the Company's unsecured subordinated floating rate debentures as a result of the appreciation (depreciation) of the Canadian dollar against the US dollar.	(12.1)	(1.4)	(10.7)	764%	(18.6)	15.8	(34.4)	NM
Remaining foreign exchange (gain) loss	2.3	0.5	1.8	360%	2.9	5.9	-	-51%
	(6.2)	(2.3)	(3.9)	170%	(3.1)	8.6	(8.7)	NM

NM - Not meaningful

(1) Offsetting amounts recorded in other comprehensive income. Net impact to Total comprehensive income for each period is nil.

The remaining foreign exchange gains and losses per the table above are primarily related to the unrealized foreign exchange translation gains and losses of certain net Canadian dollar denominated liability balances to US dollars as a result of the Canadian dollar's depreciation or appreciation against the US dollar.

TSS membership liability revaluation charge – The valuation of the TSS membership liability that was put in place in Q4 2014 increased by approximately 10% or $17.6 million from Q3 2018, and increased by approximately 41% or $55.2 million from Q4 2017. The increases are primarily the result of the growth in TSS' reported trailing twelve month maintenance revenue (primarily due to acquisitions). Maintenance revenue and net tangible assets are the two main drivers in the calculation of the liability. The liability recorded on the balance sheet increased by 35% or $48.2 million over the twelve month period ended December 31, 2018 from $135.8 million to $184.0 million as a result of the revaluation charge of $55.2 million and a $7.0 million foreign exchange gain that was recorded through other comprehensive income. The TSS membership liability is denominated in Euros and the Euro depreciated 4% versus the US dollar during the 2018 fiscal year.

Finance and other expense (income) – Finance and other income for the three and twelve month periods ended December 31, 2018 was $3.6 million and $17.0 million respectively compared to $1.6 million and $3.5 million for the comparable periods in 2017. In September 2008 the Company acquired certain assets and liabilities of Maximus Inc.'s Asset, Justice, and Education Solutions businesses. As part of the acquisition, the Company recorded an accrual of $7.9 million for financial liabilities potentially due on a long-term acquired contract. No financial liabilities were ever assessed and the statute of limitations now restricts any legal action by the customer with regards to the acquired contract. The $7.9 million accrual was released into income in Q1 2018. Interest earned on cash balances for the three and twelve months ended December 31, 2018 was $2.0 million and $5.2 million respectively, compared to $1.3 million and $4.1 million for the same periods in 2017. Losses of $1.5 million relating to the sale of available-for-sale equity securities were also recorded during the twelve months ended December 31, 2017 and no similar losses were recorded in 2018.

Bargain purchase gain – Bargain purchase gains totalling $67.9 million and $68.5 million were recorded in the three and twelve month periods ended December 31, 2018 relating to nine acquisitions made during 2017 and 2018. Of the 2018 amounts $62.7 million relates to a single acquisition made in the fourth quarter for aggregate cash consideration of $nil. Prior to acquisition the previous owners had begun an extensive restructuring of the business which will need to be completed under Constellation's ownership. It is therefore expected that the business will generate large cash and operating losses in 2019. For Constellation to ensure a sufficient return on its investment in the turnaround of the business there was a requirement as part of the acquisition for the seller to capitalize the balance sheet on closing with cash in the amount of €47 million (US$53 million). While this cash will be required to fund losses generated by the business in 2019, IFRS does not permit a restructuring accrual to be recorded as part of the opening balance sheet acquisition accounting for the majority of the expected charges. The result is a bargain purchase gain of $62.7 million being recorded in the Q4 2018 results, and based on current estimates an EBITA loss inclusive of restructuring costs of approximately $46 million that will be recorded in the 2019 results. Bargain purchase gains totalling $4.9 million and $9.9 million were recorded in the three and twelve month periods ended December 31, 2017 relating to four of the acquisitions made during 2017. Other than the gain related to the specific acquisition described above, the gains resulted from the fact that the fair value of the separately identifiable assets and liabilities acquired exceeded the total consideration paid, principally due to the acquisition of certain assets that will benefit the Company that had limited value to the sellers.

Finance costs – Finance costs for the quarter ended December 31, 2018 increased $2.5 million to $7.8 million, compared to $5.3 million for the same period in 2017. During the twelve months ended December 31, 2018, finance costs increased $1.1 million to $25.9 million, from $24.8 million over the same period in 2017. There are no individually material reasons contributing to these variances.

Income taxes – We operate globally and we calculate our tax provision in each of the jurisdictions in which we conduct business. Our effective tax rate on a consolidated basis is, therefore, affected by the realized and anticipated relative profitability of our operations in those various jurisdictions, as well as different tax rates that apply and our ability to utilize tax losses and other credits. For the quarter ended December 31, 2018, income tax expense decreased $0.3 million to $29.4 million compared to $29.7 million for the same period in 2017. During the fiscal year ended December 31, 2018, income tax expense increased $7.2 million to $106.1 million compared to $98.9 million for the same period in 2017. Current tax expense as a percentage of adjusted net income before tax was 15% and 17% for the three and twelve months ended December 31, 2018 respectively, compared to 16% and 19% for the same periods in 2017. This rate has historically approximated our cash tax rate however the quarterly rate can sometimes fall outside of the annual range due to out of period adjustments. Current tax expense reflects gross taxes before the application of R&D tax credits which are classified as part of "other, net" expenses in the statement of income. For the three and twelve months ended December 31, 2018 current tax expense was $0.2 million lower and $1.9 million higher respectively than it would have been under prior IFRS (IAS 18). The deferred income tax recovery increases of $7.5 million and $12.9 million for the three and twelve months ended December 31, 2018 respectively, relates to various items including changes in recognition of certain deferred income tax assets.

Constellation is subject to tax audits in the countries in which the Company carries on business globally. These tax audits could result in additional tax expense in future periods relating to historical filings. Reviews by tax authorities generally focus on, but are not limited to, the validity of the Company's inter-company transactions, including financing and transfer pricing policies which generally involve subjective areas of taxation and a significant degree of judgment. If any of these tax authorities are successful with their challenges, the Company's income tax expense may be adversely affected and Constellation could also be subject to interest and penalty charges.

Net Income and Earnings per Share:

Net income for the quarter ended December 31, 2018 was $179.0 million compared to net income of $76.3 million for the same period in 2017. On a per share basis this translated into a net income per diluted share of $8.45 in the quarter ended December 31, 2018 compared to net income per diluted share of $3.60 for the same period in 2017. For the 2018 fiscal year, net income was $379.3 million or $17.90 per diluted share compared to $221.9 million or $10.47 per diluted share for the 2017 fiscal year. There was no change in the number of shares outstanding.

Adjusted EBITA:

For the quarter ended December 31, 2018, Adjusted EBITA increased to $226.1 million compared to $174.7 million for the same period in 2017 representing an increase of 29%. For the fiscal year ended December 31, 2018, Adjusted EBITA increased to $756.7 million compared to $621.2 million during the same period in 2017, representing an increase of 22%. As discussed in the "Revenue" section above, the Company adopted IFRS 15 effective January 1, 2018 utilizing the cumulative effect method. Under the cumulative effect method comparative periods have not been restated however the quantitative differences between reported results under IFRS 15 and those that would have been reported under prior IFRS have been disclosed in our financial statements. For the three and twelve months ended December 31, 2018, Adjusted EBITA was $2.5 million lower and $4.1 million higher respectively, than it would have been under prior IFRS. Adjusted EBITA margin was 27% and 25% for the three and twelve months ended December 31, 2018 respectively, compared to 25% during the same periods in 2017. Excluding the impact of IFRS 15, Adjusted EBITA margin would still have been 27% and 25% for the three and twelve months ended December 31, 2018, respectively. See "Non-IFRS Measures" for a description of Adjusted EBITA and Adjusted EBITA margin.

The following table reconciles Adjusted EBITA to net income:

	Three months ended December 31,		Year ended December 31,	
	2018	2017	2018	2017
	($M, except percentages)		($M, except percentages)	
Total revenue	830.5	687.6	3,060.1	2,479.4
Net income	179.0	76.3	379.3	221.9
Adjusted for:				
Income tax expense (recovery)	29.4	29.7	106.1	98.9
Foreign exchange (gain) loss	(6.2)	(2.3)	(3.1)	8.6
TSS membership liability revaluation charge	17.6	9.6	55.2	49.9
Finance and other income	(3.6)	(1.6)	(17.0)	(3.5)
Bargain purchase gain	(67.9)	(4.9)	(68.5)	(9.9)
Finance costs	7.8	5.3	25.9	24.8
Amortization of intangible assets	70.0	62.6	278.8	230.5
Adjusted EBITA	226.1	174.7	756.7	621.2
Adjusted EBITA margin	27%	25%	25%	25%

Adjusted net income:

For the quarter ended December 31, 2018, Adjusted net income increased to $187.3 million from $140.8 million for the same period in 2017, representing an increase of 33%. Adjusted net income margin was 23% for the quarter ended December 31, 2018 and 20% for the same period in 2017. For the quarter ended December 31, 2018, Adjusted net income was $1.5 million lower than it would have been under prior IFRS (IAS 18). For the fiscal year ended December 31, 2018, Adjusted net income increased to $597.0 million from $462.8 million during the same period in 2017, representing an increase of 29%. Adjusted net income margin was 20% for the fiscal year ended December 31, 2018 and 19% for the same period in 2017. For the fiscal year ended December 31, 2018, Adjusted net income was $3.2 million higher than it would have been under prior IFRS (IAS 18). Excluding the impact of the unrealized foreign exchange (gain) loss recorded in each of the three and twelve-month periods ended December 31, 2017 and 2018, the $7.9 million financial liability accrual reversal recorded to finance and other income in Q1 2018, and the impacts of IFRS 15, the margins would have been 22% and 19% for the respective periods in 2018, and 20% and 19% for the respective periods in 2017. See "Non-IFRS Measures" for a description of Adjusted net income and Adjusted net income margin.

Non-controlling interest in the Adjusted net income of TSS - As explained in the "Capital Resources and Commitments" section below, in Q4 2014 33.29% of the voting interests in TSS were sold by us, however no adjustment has been made in the Company's Consolidated Financial Statements to reflect the 33.29% of earnings that are not attributable to Constellation shareholders. Instead, due to an option available to the minority owners to sell all or a portion of their interests back to Constellation, the minority interest is accounted for as a liability on the Company's balance sheet. The liability is revalued at each period end in accordance with an agreed upon valuation methodology with the change being included in net income. The non-controlling interest in the Adjusted net income of TSS for the three and twelve months ended December 31, 2018 was $7.3 million and $27.3 million respectively, as compared to $6.2 million and $22.0 million for the same periods in 2017.

The following table reconciles Adjusted net income to Net income:

	Three months ended December 31,		Year ended December 31,	
	2018	2017	2018	2017
	($M, except percentages)		($M, except percentages)	
Total revenue	830.5	687.6	3,060.1	2,479.4
Net income	179.0	76.3	379.3	221.9
Adjusted for:				
Amortization of intangible assets	70.0	62.6	278.8	230.5
TSS membership liability revaluation charge	17.6	9.6	55.2	49.9
Bargain purchase gain	(67.9)	(4.9)	(68.5)	(9.9)
Less non-controlling interest in the Adjusted net income of TSS	(7.3)	(6.2)	(27.3)	(22.0)
Deferred income tax expense (recovery)	(4.1)	3.4	(20.5)	(7.6)
Adjusted net income	187.3	140.8	597.0	462.8
Adjusted net income margin	23%	20%	20%	19%

Quarterly Results

	Quarter Ended								
	Dec. 31 2016	Mar. 31 2017	Jun. 30 2017	Sep. 30 2017	Dec. 31 2017	Mar. 31 2018	Jun. 30 2018	Sep. 30 2018	Dec. 31 2018
	($M, except per share amounts)								
Revenue	563.8	555.3	600.1	636.5	687.6	718.5	752.0	759.1	830.5
Net income	65.7	40.4	51.2	54.3	76.3	82.5	52.0	65.7	179.0
Adjusted net income	121.8	94.5	112.3	115.5	140.8	142.6	121.9	145.2	187.3
Adjusted net income margin	22%	17%	19%	18%	20%	20%	16%	19%	23%
Net income per share									
Basic & diluted	3.10	1.91	2.41	2.56	3.60	3.90	2.45	3.10	8.45
Adjusted net income per share									
Basic & diluted	5.75	4.46	5.30	5.45	6.64	6.73	5.75	6.85	8.84

We experience seasonality in our operating results in that Adjusted net income margins in the first quarter of every year are typically lower than margins achieved in the second, third and fourth quarters. The key drivers for the lower margins are increased payroll tax costs associated with our annual bonus payments that are made in the month of March, and the fact that historically there has been a consistent focus at year end to complete sales implementation projects which generally translates into increased professional services revenue in the fourth quarter and decreased professional services revenue in the first quarter. Our quarterly results may also fluctuate as a result of the various acquisitions which may be completed by the Company in any given quarter. We may experience variations in our net income on a quarterly basis depending upon the timing of certain expenses or gains, which may include changes in provisions, acquired contract liabilities, foreign exchange gains and losses, bargain purchase gains, and gains or losses on the sale of financial and other assets.

Supplemental Financial Information

As mentioned in the 2018 annual letter to shareholders the non-IFRS and IFRS tables historically included in the letters will now be included in the Q4 MD&A.

Table 1

($M, except percentages)

	Adjusted Net Income (a)	Average Invested Capital	ROIC	Organic Net Revenue Growth (YoY)	ROIC + Organic Net Revenue Growth	Organic Net Revenue Growth (YoY) Adjusted for FX
2009	62	256	24%	-3%	21%	-2%
2010	84	325	26%	-2%	24%	-3%
2011	140	394	36%	7%	43%	5%
2012	172	491	35%	2%	37%	3%
2013	207	585	35%	4%	39%	4%
2014	274	739	37%	3%	40%	3%
2015	371	965	38%	-3%	35%	2%
2016	395	1261	31%	1%	32%	3%
2017	463	1622	29%	4%	33%	3%
2018	597	2061	29%	3%	32%	2%

(a) Historical figures restated to comply with revised definition.

"Average Invested Capital" represents the average equity capital of Constellation, and is based on the company's estimate of the amount of money that its common shareholders had invested in Constellation. Subsequent to that estimate, each period the company has kept a running tally, adding Adjusted net income, subtracting any dividends, adding any amounts related to share issuances and making some minor adjustments, including adjustments relating to our use of certain incentive programs and the amortization of impaired intangibles. The company believes that Average Invested Capital is a useful measure as it approximates the retained earnings of the company prior to taking into consideration amortization of intangible assets, deferred income taxes, and certain other non-cash expenses (income) incurred or recognized by the company from time to time.

"ROIC" means Return on Invested Capital and represents a ratio of Adjusted net income to Average Invested Capital. The Company believes this is a useful profitability measure as it excludes non-cash expenses (income) from both the numerator and denominator.

"Net Revenue". Net Revenue is gross revenue for GAAP or IFRS purposes less any third party and flow-through expenses. Constellation believes Net Revenue is a useful measure since it captures 100% of the license, Maintenance and services revenues associated with Constellation's own products, and only the margin on the lower value-added revenues such as commodity hardware or third-party software.

Our shareholders' Average Invested Capital grew 27% in 2018, in line with its ten-year compound average growth rate, and we were able to invest the majority of our cash flows from operations into business acquisitions.

The return on our shareholders' Average Invested Capital ("ROIC") remained at 29% in 2018 as compared to 2017.

Constellation's Organic Net Revenue growth was 3% in 2018, 2% after adjusting for the impact of foreign exchange. The Harris operating group made some large acquisitions in the US Healthcare vertical starting in December 2014 that we knew would experience organic decline for a number of years. Excluding the impact of businesses in the US Healthcare vertical Constellation's foreign exchange adjusted organic net revenue growth was 4% in 2015, 2016, 2017 and 2018. The expectation is that growth in the US Healthcare vertical will improve going forward.

ROIC + Organic Net Revenue growth ("ROIC+OGr") dropped to 32% in 2018 as a result of the drop in organic growth. Over time, ROIC+OGr should move asymptotically towards our hurdle rate if we are deploying all of our free cash flow on acquisitions and are accurately forecasting the internal rates of return (“IRR's”) on those acquisitions.

Table 2

	Total Revenue per Share	YoY △	Cash Flow from Operating Activities ("CFO") per Share	YoY △
2008	15.60	36%	2.96	83%
2009	20.67	32%	3.85	30%
2010	29.92	45%	5.06	32%
2011	36.49	22%	6.49	28%
2012	42.05	15%	6.83	5%
2013	57.13	36%	10.40	52%
2014	78.77	38%	16.11	55%
2015	86.75	10%	18.68	16%
2016	100.28	16%	23.16	24%
2017	117.00	17%	24.91	8%
2018	144.40	23%	31.24	25%
CAGR		25%		27%

In Table 2 we have presented two IFRS-based metrics that we believe can be important in assessing our business. Over time CFO/share has grown at a slightly faster pace than revenue. Total Revenue per Share increased 23% in 2018 and CFO/share grew 25%.

It is important to monitor debt when using CFO/Share because this metric does not take interest cost into account. Similarly, the metric isn’t adjusted for capital expenditures (although they tend to be small for Constellation). It also doesn’t take into account the volatility of working capital and taxes paid.

Liquidity

Our net cash position (cash less bank indebtedness excluding capitalized transaction costs) increased by $40.5 million to $431.3 million in the fiscal year ended December 31, 2018 resulting from cash flows from operations exceeding net capital deployed on acquisitions less dividends paid. Cash increased by $99.6 million to $588.6 million at December 31, 2018 compared to $489.0 million at December 31, 2017 and bank indebtedness increased by $59.1 million to $157.3 million at December 31, 2018 compared to $98.2 million at December 31, 2017.

Total assets increased $647.2 million, from $2,288.2 million at December 31, 2017 to $2,935.4 million at December 31, 2018. The increase is primarily due to an increase in intangible assets of $368.0 million primarily relating to acquisitions made since December 31, 2017. At December 31, 2018 TSS held a cash balance of $17.2 million and Acceo held a cash balance of $24.8 million. As explained in the “Capital Resources and Commitments” section below, there are limitations on the ability for TSS and Acceo to distribute funds to Constellation.

Current liabilities increased $172.2 million, from $1,171.9 million at December 31, 2017 to $1,344.1 million at December 31, 2018. The increase is primarily due to an increase in deferred revenue of $115.4 million mainly due to acquisitions made since December 31, 2017 and the timing of maintenance and other billings versus performance and delivery under those customer arrangements.

Net Changes in Cash Flows
(in $M's)

	Year ended December 31, 2018	Year ended December 31, 2017
Net cash provided by operating activities	662.0	527.9
Net cash from (used in) financing activities	(48.6)	(152.8)
Cash used in the acquisition of businesses	(602.9)	(300.1)
Cash obtained with acquired businesses	118.2	44.1
Net cash from (used in) other investing activities	(23.3)	6.1
Net cash from (used in) investing activities	(508.0)	(249.9)
Effect of foreign currency	(5.8)	10.3
Net increase (decrease) in cash and cash equivalents	**99.6**	**135.5**

The net cash flows from operating activities were $662.0 million for the fiscal year ended December 31, 2018. The $662.0 million provided by operating activities resulted from $379.3 million in net income plus $404.4 million of non-cash adjustments to net income and $13.6 million of cash from non-cash operating working capital, offset by $135.3 million in taxes paid.

The net cash flows used in financing activities in the fiscal year ended December 31, 2018 were $48.6 million, which is mainly a result of dividends paid of $84.8 million, interest paid on bank indebtedness and the Company's unsecured subordinated floating rate debentures in the period of $24.3 million offset by a net increase in bank indebtedness of $64.0 million.

The net cash flows used in investing activities in the fiscal year ended December 31, 2018 were $508.0 million. The cash used in investing activities was primarily due to acquisitions for an aggregate of $602.9 million (including payments for holdbacks and earnouts relating to prior acquisitions), offset by $118.2 of acquired cash. As noted above under "bargain purchase gain" $53 million of acquired cash relates to a single acquisition made in Q4 2018, and will largely be required to fund losses generated by that business in 2019.

Capital Resources and Commitments

Bank Indebtedness

On December 19, 2018, we completed an amendment and restatement of our revolving credit facility agreement (the "CSI Facility") with a syndicate of Canadian chartered banks, U.S. banks, and a Japanese bank in the amount of $700 million, extending its maturity date to December 19, 2023. The CSI Facility bears a variable interest rate with no fixed repayments required over the term to maturity. Interest rates are calculated at standard U.S. and Canadian reference rates plus interest rate spreads based on a leverage table. The CSI Facility is currently collateralized by the majority of our assets including the assets of certain material subsidiaries. The CSI Facility contains standard events of default which if not remedied within a cure period would trigger the repayment of any outstanding balance. The CSI Facility is available for acquisitions, distributions, working capital needs, and other general corporate purposes and for the needs of our subsidiaries. As at December 31, 2018, no amounts were drawn on the CSI Facility, and letters of credit totalling $21.5 million were issued, which limits the borrowing capacity on a dollar-for-dollar basis. Transaction costs associated with this CSI Facility are being amortized through profit or loss using the effective interest rate method. As at December 31, 2018, the carrying amount of such costs totalling $1.7 million has been classified as part of other non-current assets in the statement of financial position.

On June 24, 2014 Constellation Software Netherlands Holding Cooperatief U.A. ("CNH"), a subsidiary of Constellation and the indirect owner of 100% of TSS, entered into a €150 million term and €10 million multicurrency revolving credit facility (the "CNH Facility") with a number of European and North American financial institutions. The CNH Facility bears interest at a rate calculated at EURIBOR plus interest rate spreads based on a leverage table. The CNH Facility is collateralized by substantially all of the assets owned by CNH and its subsidiaries which includes substantially all of the assets of TSS and its subsidiaries. The CNH Facility contains standard events of default which if not remedied within a cure period would trigger the repayment of any outstanding balance. On July 14, 2017 (in conjunction with the issuance of the New CNH Facility, as defined below), the principal outstanding on the term loan of €116.5 million was repaid in full and the CNH Facility was extinguished. Unamortized transaction costs of $3.3 million associated with the CNH Facility were included in profit or loss for the year ended December 31, 2017.

On July 14, 2017, CNH entered into a new credit facility (the "New CNH Facility") with a number of European financial institutions. Under this credit facility, CNH is able to borrow up to €300 million under a multicurrency revolving loan facility and up to €50 million under an additional uncommitted term loan facility. The New CNH Facility has an initial term of five years with an extension option for two additional one year periods. The New CNH Facility bears interest at a rate calculated at EURIBOR plus interest rate spreads based on a leverage table. The New CNH Facility is collateralized by substantially all of the assets owned by CNH and its subsidiaries which includes substantially all of the assets of TSS and its subsidiaries. The New CNH Facility contains standard events of default which if not remedied within a cure period would trigger the repayment of any outstanding balance. As at December 31, 2018, $51.5 million (€45.0 million) had been drawn from this credit facility. Transaction costs associated with the New CNH Facility have been included as part of the carrying amount of the liability and are being amortized through profit or loss using the effective interest rate method. As at December 31, 2018, the carrying amount of such costs relating to this facility totaling approximately $1.4 million (€1.2 million) has been classified as part of Debt without recourse to Constellation Software Inc. in the consolidated statement of financial position.

The CSI Facility and New CNH Facility are independent of each other. The New CNH Facility is not guaranteed by Constellation or its subsidiaries nor is Constellation or any subsidiary subject to the terms of the New CNH Facility other than, in each case, CNH and its subsidiaries. Similarly, CNH and its subsidiaries did not guarantee the CSI Facility and are not subject to the provisions thereof. The New CNH Facility imposes limitations on the amount of distributions that CNH and its subsidiaries may make to Constellation.

On July 6, 2018 Acceo Solutions, L.P. and its wholly-owned subsidiary Acceo Solutions Inc. (together "Acceo") entered into a C$145.0 million term and C$10.0 million revolving credit facility (the "Acceo Facility") with two North American lenders. Acceo is indirectly 100% owned by Constellation. The Acceo term facility presently bears interest at a rate calculated at CDOR plus interest rate spreads based on a leverage table. The Acceo Facility is collateralized by substantially all of the assets owned by Acceo and its material subsidiaries. The Acceo Facility contains standard events of default which if not remedied within a cure period would trigger the repayment of any outstanding balance. As at December 31, 2018, $105.8 million (C$144.2 million) was drawn on the term component of the Acceo Facility. The term facility requires quarterly principal repayments of $0.3 million (C$0.4 million), with the balance of the term facility to be repaid in full on July 6, 2023. As at December 31, 2018 no amounts had been drawn on the revolving component of the Acceo Facility. The revolving component of the Acceo Facility is available for acquisitions, working capital needs, and other general corporate purposes. Transaction costs associated with the Acceo Facility have been included as part of the carrying amount of the liability and are being amortized through profit or loss using the effective interest rate method. As at December 31, 2018, the carrying amount of such costs relating to this facility totaling approximately $2.2 million (C$3.0 million) has been classified as part of Debt without recourse to Constellation Software Inc. in the consolidated statement of financial position.

The Acceo Facility is independent of each of the CSI Facility and the New CNH Facility. The obligations of Acceo are not guaranteed by Constellation or its subsidiaries, however a $18 million (C$25 million) Promissory Note issued by N. Harris Computer Corporation to Acceo Solutions Inc. (representing an amount equal to the balance of the purchase price payable by Acceo Solutions to its previous shareholders in relation to the Acceo acquisition) has been pledged under the Acceo Facility. In addition, Constellation and its subsidiaries other than Acceo and its subsidiaries are not subject to the terms of the Acceo Facility. Similarily, Acceo and its subsidiaries did not guarantee the CSI Facility or the New CNH Facility and is not subject to the provisions thereof. The Acceo Facility imposes limitations on the amount of distributions that Acceo may make to Constellation.

Debentures

On October 1, 2014 and November 19, 2014, the Company issued unsecured subordinated debentures (the "Debentures") with a total principal value of C$96.0 million for total proceeds of C$91.2 million. The proceeds were used by the Company to pay down $81.2 million of outstanding bank indebtedness.

On September 30, 2015, the Company issued an additional tranche of Debentures with a total principal value of C$186.2 million for total proceeds of C$214.2 million. The proceeds were used by the Company to pay down $130.4 million of outstanding bank indebtedness. The September 30, 2015 issuance formed a single series with the outstanding C$96.0 million aggregate principal amount of Debentures, Series 1 of the Company. The Debentures have a maturity date of March 31, 2040.

TSS Membership Liability

On December 23, 2014, in accordance with the terms of the purchase and sale agreement for the TSS acquisition, and on the basis of the term sheets attached thereto, Constellation and the sellers of TSS along with members of TSS' executive management team (collectively, the "minority owners") entered into a Members Agreement pursuant to which the minority owners acquired 33.29% of the voting interests in CNH. Proceeds from this transaction in the amount of $48.5 million (€39.4 million) were utilized to repay, in part, outstanding bank indebtedness of Constellation. In accordance with IFRS, 100% of the financial results for TSS are included in the consolidated financial results of the Company.

Each of the minority owners may, at any time, exercise a put option to sell all or a portion of their interests in CNH back to Constellation for an amount calculated in accordance with a valuation methodology described within the Members Agreement. Accordingly, the Company classified the proceeds from the Members Agreement as a liability. The main valuation driver in such calculation is the maintenance and other recurring revenue of CNH. Upon the exercise of a put option, Constellation would be obligated to redeem up to 33.33% of the minority owners' interests put, no later than 30 business days from the date notice is received (classified as a current liability), and up to 33.33% on each of the first and second anniversary of the date the first redemption payment is made.

The seller of TSS also has an option available to it to sell approximately 68% of its interests in CNH, for an amount calculated in accordance with a valuation methodology described within the Members Agreement, in the event that Robin Van Poelje, TSS' CEO, is no longer employed by TSS. The approximately 32% remaining interest can be sold via the put option described above.

In the event of a change of control in Constellation, the minority owners would have the option to sell 100% of their interests in CNH for an amount calculated in accordance with a valuation methodology described within the Members Agreement. Constellation would be obligated to remit payment in respect thereof no later than 30 business days from the date notice is given.

Commencing at any time after December 31, 2023, Constellation may exercise a call option to purchase all of the minority owners' interests in CNH, for an amount calculated in accordance with a valuation methodology described within the Members Agreement. Upon exercise of the call option, the full purchase price will be paid within 30 business days of the notice date, following which the minority owners' membership in CNH will be terminated. There is a valuation premium if the call option is exercised versus the put option.

If any of TSS' executive management team that participate in the Members Agreement are terminated for urgent cause as defined in Section 7:678 of the Dutch Civil Code, Constellation shall have the right to purchase all of the interests beneficially owned by the terminated executive for an amount calculated in accordance with the valuation methodology described within the Members Agreement. The full purchase price will be paid within 30 business days from the date notice is given, following which the terminated executive's membership in CNH will be terminated. An option does exist for the terminated executive to elect to be paid in annual installments of 33.33% of his interests in CNH over a 3 year period. The valuation of the interests being purchased will be calculated at each annual payment date.

Other commitments

Commitments include operating leases for office equipment and facilities, letters of credit and performance bonds issued on our behalf by financial institutions in connection with facility leases and contracts with public sector customers. Also, occasionally we structure some of our acquisitions with contingent consideration based on the future performance of the acquired business. The fair value of contingent consideration recorded in our statement of financial position was $18.9 million at December 31, 2018. Aside from the aforementioned, we do not have any other business arrangements, derivative financial instruments, or any equity interests in non-consolidated entities that would have a significant effect on our assets and liabilities as at December 31, 2018.

(in millions of dollars)

	Total	< 1 yr	1-5 yrs	> 5 yrs
Operating leases	274.3	74.6	161.5	38.2
Holdbacks	72.1	47.3	24.8	-
TSS membership liability	184.0	66.7	117.3	-
Debentures	207.1	-	-	207.1
Debt without recourse to Constellation Software Inc.	157.3	51.2	106.1	-
Total outstanding commitments	894.8	239.8	409.7	245.3

The TSS membership liability commitment assumes that the minority owners have exercised their put option to sell 100% of their interests back to Constellation. This option however has not been exercised as at February 13, 2019. See the "Critical Accounting Estimate" section of the Company's 2018 Annual Consolidated Financial Statements for a discussion on the valuation methodology utilized.

Foreign Currency Exposure

We operate internationally and have foreign currency risks related to our revenue, operating expenses, assets and liabilities denominated in currencies other than the U.S. dollar. Consequently, we believe movements in the foreign currencies in which we transact will impact future revenue and net earnings. Our analysis related to the change in average exchange rates from 2017 to 2018 suggests that the impact to Adjusted EBITA margins for both the three and twelve months ended December 31, 2018 was less than 1%. The impact to organic revenue growth for the three and twelve months ended December 31, 2018 was approximately negative 2% and positive 1% respectively. We cannot predict the effect of foreign exchange gains or losses in the future; however, if significant foreign exchange losses are experienced, they could have a material adverse effect on our business, revenues, results of operations, and financial condition. The Company enters into forward foreign exchange contracts from time to time with the objective of mitigating volatility in profit or loss in respect of financial liabilities. In entering into these forward exchange contracts, the Company is exposed to the credit risk of the counterparties to such contracts and the possibility that the counterparties will default on their payment obligations under these contracts. However, given that the counterparties are Schedule 1 banks or affiliates thereof, the Company believes these risks are not material. During the twelve months ended December 31, 2018, the Company did not purchase any contracts of this nature.

The following table provides an approximate breakdown of our revenue and expenses by currency, expressed as a percentage of total revenue and expenses, as applicable, for the three and twelve months ended December 31, 2018:

	Three Months Ended December 31, 2018		Year Ended December 31, 2018	
Currencies	% of Revenue	% of Expenses	% of Revenue	% of Expenses
USD	52%	45%	53%	45%
CAD	7%	12%	7%	13%
GBP	6%	7%	7%	7%
EURO	22%	22%	21%	21%
CHF	1%	4%	1%	4%
Others	12%	10%	11%	10%
Total	100%	100%	100%	100%

Off-Balance Sheet Arrangements

As a general practice, we have not entered into off-balance sheet financing arrangements. Except for operating leases and letters of credit, all of our liabilities and commitments are reflected as part of our statement of financial position.

Proposed Transactions

We seek potential acquisition targets on an ongoing basis and may complete several acquisitions in any given fiscal year.

Critical Accounting Estimates

General

The preparation of our consolidated financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets and liabilities. Our estimates are based on historical experience and on various other assumptions that are believed to be reasonable under the circumstances. Our ongoing evaluation of these estimates forms the basis for making judgments about the carrying values of assets and liabilities and the reported amount of revenues and expenses, in cases where they are not readily ascertainable from other sources. Actual amounts may differ from these estimates under different assumptions or conditions.

Our significant accounting policies are fully described in Note 3 to our annual consolidated financial statements which are available on SEDAR (www.sedar.com). Certain accounting policies are particularly important to the reporting of our financial position and results of operations, and require the application of significant judgment by our management. An accounting policy is deemed to be critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made, and if different, estimates that reasonably could have been used, or changes in the accounting estimates that are reasonably likely to occur periodically, could have a material impact on the financial statements. Management believes the following critical accounting policies reflect the more significant estimates and assumptions used in the preparation of our consolidated financial statements. We believe that there have been no significant changes in our critical accounting estimates for the years presented in our consolidated financial statements.

Revenue Recognition

Revenue represents the amount the Company expects to receive for products and services in its contracts with customers, net of discounts and sales taxes. The Company reports revenue under four revenue categories being, License, Hardware and other, Professional services, and Maintenance and other recurring revenue. Software license revenue is comprised of non-recurring license fees charged for the use of software products licensed under multiple-year or perpetual arrangements. Professional service revenue consists of fees charged for implementation services, custom programming, product training and consulting. Hardware and other revenue includes the resale of third party hardware as part of customized solutions, as well as sales of hardware assembled internally and the reimbursement of travel costs. Maintenance and other recurring revenue primarily consists of fees charged for customer support on software products post-delivery and also includes recurring fees derived from combined software/support contracts, transaction revenues, managed services, and hosted products.

Contracts with multiple products or services

Typically, the Company enters into contracts that contain multiple products and services such as software licenses, hosted software-as-a-service, maintenance, professional services, and hardware. The Company evaluates these arrangements to determine the appropriate unit of accounting (performance obligation) for revenue recognition purposes based on whether the product or service is distinct from some or all of the other products or services in the arrangement. A product or service is distinct if the customer can benefit from it on its own or together with other readily available resources and Constellation's promise to transfer the good or service is separately identifiable from other promises in the contractual arrangement with the customer. Non-distinct products and services are combined with other goods or services until they are distinct as a bundle and therefore form a single performance obligation.

Where a contract consists of more than one performance obligation, revenue is allocated to each based on their estimated standalone selling price ("SSP").

Nature of products and services

The Company sells on-premise software licenses on both a perpetual and specified-term basis. Revenue from the license of distinct software is recognized at the time that both the right-to-use the software has commenced and the software has been made available to the customer. Certain of the Company's contracts with customers contain provisions that require the customer to renew optional support and maintenance in order to maintain the active right to use a perpetual or term license. The renewal payments after the initial bundled support and maintenance term in these cases apply to both the continued right-to-use the license and the support and maintenance renewal. Where the fees payable for the initial term are incremental to the fees for the renewal terms, the excess is treated as a prepayment for expected renewals and allocated (amortized) evenly over the expected customer renewals, up to the estimated life of the software that is typically 4-6 years.

Revenue from the license of software that involves complex implementation or customization that is not distinct, and/or includes sales of hardware that is not distinct, is recognized as a combined performance obligation using the percentage-of-completion method based either on the achievement of contractually defined milestones or based on labour hours.

A portion of the Company's sales, categorized as hardware and other revenue, are accounted for as product revenue. Product revenue is recognized when control of the product has transferred under the terms of an enforceable contract.

Revenue related to the customer reimbursement of travel related expenses incurred during a project implementation where the Company is the principal in the arrangement is included in the hardware and other revenue category. Revenue is recognized as costs are incurred which is consistent with the period in which the costs are invoiced. Reimbursable travel expenses incurred for which an invoice has not been issued, are recorded as part of unbilled revenue on the statement of financial position.

Maintenance and other recurring revenue primarily consists of fees charged for customer support on software products post-delivery and also includes, to a lesser extent, recurring fees derived from software licenses that are not distinct from maintenance, transaction revenues, managed services, and hosted products.

Revenue from software-as-a-service (SaaS) arrangements, which allows customers to use hosted software over a term without taking possession of the software, are provided on a subscription basis. Revenue from the SaaS subscription, which includes the hosted software and maintenance is recognized rateably over the term of the subscription. Significant incremental payments for SaaS in an initial term are recognized rateably over the expected renewal periods, up to the estimated life of the software.

Professional services revenue including installation, implementation, training and customization of software is recognized by the stage of completion of the performance obligation determined using the percentage of completion method noted above or as such services are performed as appropriate in the circumstances. The revenue and profit of fixed price contracts is recognized on a percentage of completion basis when the outcome of a contract can be estimated reliably. When the outcome of the contract cannot be estimated reliably but the Company expects to recover its costs, the amount of expected costs is treated as variable consideration and the transaction price is updated as more information becomes known.

The timing of revenue recognition often differs from contract payment schedules, resulting in revenue that has been earned but not billed. These amounts are included in unbilled revenue. Amounts billed in accordance with customer contracts, but not yet earned, are recorded and presented as part of deferred revenue.

Valuation of Identifiable Goodwill and Other Intangible Assets

Acquisitions have been accounted for using the acquisition method required by IFRS 3. Goodwill arising on acquisitions is measured as the fair value of the consideration transferred including the recognized amount of any non-controlling interest in the acquiree, if any, less the net recognized amount of the estimated fair value of identifiable assets acquired and liabilities assumed (subject to certain exemptions to fair value measurement principles such as deferred tax assets or liabilities), all measured as of the acquisition date. When the excess of the consideration transferred less the assets and liabilities acquired is negative, a bargain purchase gain is recognized immediately in profit or loss. Transaction costs that the Company incurs in connection with a business combination are expensed as incurred.

We use the income approach to value acquired technology and customer related intangible assets, which are the two material intangible asset categories reported in our financial statements.

The income approach is a valuation technique that calculates the fair value of an intangible asset based on the cash flows that the asset can be expected to generate over its remaining useful life. We utilize the discounted cash flow ("DCF") methodology which is a form of the income approach that begins with a forecast of the annual cash flows a market participant would expect the subject intangible asset to generate over a discrete projection period. The forecasted cash flows for each of the years in the discrete projection period are then converted to their present value equivalent using a rate of return appropriate for the risk of achieving the intangible assets' projected cash flows, again, from a market participant perspective. The present value of the forecasted cash flows are then added to the present value of the residual value of the intangible asset (if any) at the end of the discrete projection period to arrive at a conclusion with respect to the estimated fair value of the subject intangible asset.

Specifically, we rely on the relief-from-royalty method to value the acquired technology and the multiple-period excess earnings method ("MEEM") to value customer relationship assets.

The underlying premise of the relief-from-royalty method is that the fair value of the technology is equal to the costs savings (or the "royalty avoided") resulting from the ownership of the asset by the avoidance of paying royalties to license the use of the technology from another owner. Accordingly the income forecast reflects an estimate of a fair royalty that a licensee would pay, on a percentage of revenue basis, to obtain a license to utilize the technology.

The MEEM method isolates the cash flows attributable to the subject asset by utilizing a forecast of expected cash flows less the returns attributable to other enabling assets, both tangible and intangible.

Goodwill is initially recorded when the purchase price paid for an acquisition exceeds the fair value assigned to the net identifiable tangible and intangible assets acquired. Goodwill is not amortized but rather it is periodically assessed for impairment.

After initial recognition, goodwill is measured at cost less any accumulated impairment losses, with the carrying value being reviewed for impairment at least annually and whenever events or changes in circumstances indicate that the carrying value may be impaired. We perform an annual review in the fourth quarter of each fiscal year, or more frequently if indicators of potential impairment exist, to determine if the recorded goodwill is impaired. In respect of equity accounted investees, the carrying amount of goodwill is included in the carrying amount of the investment, and an impairment loss on such an investment is not allocated to any asset, including goodwill, that forms part of the carrying amount of the equity accounted investee. No such losses have been recognized during the year.

The impairment test methodology is based on a comparison between the higher of fair value less costs to sell and value-in-use of each of the Company's cash generating units ("CGU") and the net asset carrying values (including goodwill). Within the Company's reporting structure, business units generally reflect the CGU and are one level below the six operating segments (Volaris, Harris, Total Specific Solutions, Jonas, Perseus, and Vela Operating Groups). In determining the recoverable amount, the Company applies an estimated market valuation multiple to the business unit's most recent annual recurring revenues, which are generally derived from post-contract customer support revenues, transactional revenues, and hosted products revenues. Valuation multiples applied by the Company for this purpose reflect current market conditions specific to the business unit and are assessed for reasonability by comparison to the Company's current and past acquisition experience involving ranges of revenue-based multiples required to acquire representative software companies and the Company's overall revenue based-trading multiple. In addition, in certain instances, the recoverable amount is determined using a value-in-use approach which follows the same valuation process that is undertaken for the Company's business acquisitions. An impairment is recognized if the carrying amount of a CGU exceeds its estimated recoverable amount. The recoverable amount of goodwill is estimated annually on December 31 of each year or whenever events or changes in circumstances indicate that the carrying value may be impaired.

We also review the carrying value of amortizable intangible assets for impairment whenever events and circumstances indicate that the carrying value of an asset may not be recoverable from the estimated future cash flows expected to result from its use and eventual disposition. Any change in estimate which causes the undiscounted expected future cash flows to be less than the carrying value, would result in an impairment loss being recognized equal to the amount by which the carrying value of the asset exceeds the fair value of the asset.

The critical accounting estimates described above affect both the public and private segments of the business. The approach taken by management in performing these estimates is not significantly different between segments.

TSS Membership Liability

Commencing any time after December 31, 2014, each of the minority owners may exercise a put option to sell all or a portion of their interests in CNH back to Constellation for an amount calculated in accordance with a valuation methodology described within the Members Agreement. Accordingly, the Company classified the proceeds from the membership agreement as a liability. The main valuation driver in such calculation is the maintenance and other recurring revenue of CNH. Upon the exercise of a put option, Constellation would be obligated to redeem up to 33.33% of the minority owners' interests put, no later than 30 business days from the date notice is received, and up to 33.33% on each of the first and second anniversary of the date the first redemption payment is made.

In determining the valuation of the liability at December 31, 2018 we assumed the minority owners exercised their put option on December 31, 2018, and redeemed 33.33% of their interests on exercise, and will redeem 33.33% on each of the first and second anniversary dates. Maintenance and recurring revenue of CNH for the fiscal year ended December 31, 2018 was used as the basis for valuing the interests at each redemption date. A similar approach will be utilized to value any interests that have not been put or called at the end of each subsequent reporting period. However, the actual maintenance and recurring revenue of CNH for the trailing twelve months from the date of the related reporting period end will be utilized in the calculation. Any increase or decrease in the value of the membership liability will be recorded as an expense or income respectively in the Consolidated Statements of Income for the period.

Accounting for Income Taxes

Significant management judgment is required in determining our provision for income taxes, our income tax assets and liabilities, and any valuation allowance recorded against our net income tax assets. We operate in multiple geographic jurisdictions, and to the extent that we have profits in each jurisdiction, these profits are taxed pursuant to the tax laws of their jurisdiction. Our effective tax rate may be affected by changes in, or interpretations of, tax laws in any given jurisdiction, the level of profitability, utilization of net operating losses and tax credit carry forwards, changes in geographical mix of income and expense, and changes in management's assessment of matters, such as the ability to realize future tax assets. As a result of these considerations, we must estimate our income taxes in each of the jurisdictions in which we operate on a quarterly basis. This process involves estimating our actual current tax exposures, together with assessing temporary differences resulting from differing treatment of items for tax and accounting purposes. These differences result in future tax assets and liabilities, which are included in our consolidated balance sheet.

Current tax is the expected taxes payable or receivable on the taxable income or loss for the period, using tax rates enacted or substantively enacted at the reporting date, and any adjustment to taxes payable in respect of previous years.

Deferred tax is recognized in respect of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for taxation purposes. Deferred tax is not recognized for temporary differences relating to investments in subsidiaries to the extent that it is probable that they will not reverse in the foreseeable future. In addition, deferred tax is not recognized for taxable temporary differences arising on the initial recognition of goodwill.

Deferred tax is measured at tax rates that are expected to be applied to temporary differences when they reverse, based on the laws that have been enacted or substantively enacted by the reporting date. Deferred tax assets and liabilities are offset if there is a legally enforceable right to offset current tax liabilities and assets, and they relate to income taxes levied by the same tax authority on the same taxable entity, or on different tax entities, but we intend to settle current tax liabilities and assets on a net basis or their tax assets and liabilities will be realized simultaneously.

A deferred tax asset is recognized for unused tax losses, tax credits, difference in tax bases in the purchaser's tax jurisdiction and its cost as reported in the consolidated financial statements as a result of an intra-group transfer of assets and deductible temporary differences, to the extent that it is probable that future taxable profits will be available against which they can be utilized. Deferred tax assets are reviewed at each reporting date and are reduced to the extent that it is no longer probable that the related tax benefit will be realized.

We are subject to income tax audits by various authorities in respect of prior periods that could result in additional tax expense in future periods. While the outcome of current outstanding actions and claims remains uncertain, it is expected that they will be resolved without a material impact to our financial position. However, there can be no assurances as to the final resolution of these matters and, if the final outcome is adverse to us, the amounts we will be required to pay and the loss of certain future tax deductions could be material to our financial statements.

Accounts Receivable

We evaluate the collectability of our trade receivables at both a specific and collective level. All individually significant receivables are assessed for specific impairment. All individually significant receivables found not to be specifically impaired, together with receivables that are not individually significant are collectively assessed for impairment by grouping together receivables with similar risk characteristics.

Work In Progress

For revenue arrangements that are accounted for under the percentage of completion method as well as other arrangements and contracts which limit our ability to invoice at certain milestones that do not match the timing of the actual provision of the services, we record such revenue and the related unbilled receivable in work in process. Similar to accounts receivable, we constantly have to evaluate our ability to bill and subsequently collect any amounts contained in the work in progress accounts. We review these balances on a periodic basis to ensure customer balances are prudent based upon a variety of factors, such as the financial health of the customer, macroeconomic considerations and historical experience. If circumstances related to specific customers change, our estimates of the recoverability of work in progress may be further adjusted.

Provisions

A provision is recognized if, as a result of a past event, the Company has a present legal or constructive obligation that can be estimated reliably, and it is probable that an outflow of economic benefits will be required to settle the obligation. Provisions are measured at the estimated future cash flows required to settle the present obligation, based on the most reliable evidence available at the reporting date. The estimated cash flows are discounted at a pre-tax rate that reflects current market assessments of the time value of money and the risks specific to the liability. The amortization of the discount is recognized as part of finance costs.

We are currently involved in various claims and legal proceedings. Quarterly, we review the status of each significant matter and assess our potential financial exposure. Because of the uncertainties related to these matters, provisions are based only on the best information available at the time. As additional information becomes available, we reassess the potential liability related to our pending claims and litigation and, if necessary, revise our provisions. Such revisions in the estimates of the potential liabilities could have a material impact on our results of operations and financial position.

New standards and interpretations adopted

IFRS 9 Financial Instruments

IFRS 9 replaces the guidance in IAS 39 Financial Instruments: Recognition and Measurement, on the classification and measurement of financial assets. IFRS 9 eliminates the existing IAS 39 categories of held to maturity, available-for-sale and loans and receivable.

Financial assets will be classified into one of two categories on initial recognition:

- financial assets measured at amortized cost; or
- financial assets measured at fair value.

The classification of financial assets under IFRS 9 is generally based on the business model in which a financial asset is managed and its contractual cash flow characteristics.

Gains and losses on remeasurement of financial assets measured at fair value will be generally recognized in profit or loss, except for an investment in an equity instrument which is not held-for-trading. IFRS 9 provides, on initial recognition, an irrevocable election to present all fair value changes from the investment in other comprehensive income ("OCI") ("FVOCI"). The election is available on an individual investment-by-investment basis. Amounts presented in OCI will not be reclassified to profit or loss at a later date. IFRS 9 also includes a new general hedge accounting standard which will align hedge accounting more closely with risk management.

IFRS 9 replaces the 'incurred loss' model in IAS 39 with an expected credit loss ("ECL") model. The new impairment model applies to financial assets at amortized cost, contract assets and debt investments measured at FVOCI.

The Company adopted this standard on January 1, 2018 and it had a nominal impact on the Company's consolidated financial statements and related disclosures.

IFRS 15 Revenue from Contracts with Customers

The Company retrospectively adopted IFRS 15 Revenue from Contracts with Customers with an initial adoption date of January 1, 2018. The Company utilized the cumulative effect method to adopt the new standard and therefore, the comparative information has not been restated and continues to be reported under IAS 18 and IAS 11. See note 29 of our consolidated financial statements for the year ended December 31, 2018 for further details.

New standards and interpretations not yet adopted

IFRS 16 Leases

In January 2016, the IASB issued the final publication of the IFRS 16 Leases standard, which will supersede the current IAS 17, Leases standard. Under IFRS 16, a lease will exist when a customer controls the right to use an identified asset as demonstrated by the customer having exclusive use of the asset for a period of time. IFRS 16 introduces a single accounting model for lessees and all leases will require an asset and liability to be recognized on the statement of financial position at inception. The accounting treatment for lessors will remain largely the same as under IAS 17.

The standard is effective for annual periods beginning on or after January 1, 2019 with early adoption permitted, but only if the entity is also applying IFRS 15. The Company is required to retrospectively apply IFRS 16 to all existing leases as of the date of transition and has the option to either:

- apply IFRS 16 with full retrospective effect; or
- recognize the cumulative effect of initially applying IFRS 16 as an adjustment to opening equity at the date of initial application.

As a practical expedient, an entity is not required to reassess whether a contract is, or contains, a lease at the date of initial application.

The Company will be adopting IFRS 16 on January 1, 2019 and is assessing the impact of this standard on its consolidated financial statements; however, the Company believes that on adoption of the standard there will be an increase to assets and liabilities, as the Company will be required to record a right-of-use asset and a corresponding lease liability on its Consolidated Statements of Financial Position, as well as a decrease to operating costs, an increase to finance costs (due to accretion of the lease liability) and an increase to depreciation (due to depreciation of the right-of-use asset).

Share Capital

As at February 13, 2019, there were 21,191,530 common shares outstanding.

Risks and Uncertainties

The Company's business is subject to a number of risk factors which are described in our most recently filed AIF. Additional risks and uncertainties not presently known to us or that we currently consider immaterial also may impair our business and operations and cause the price of the common shares to decline. If any of the noted risks actually occur, our business may be harmed and the financial condition and results of operation may suffer significantly. In that event, the trading price of the common shares could decline, and shareholders may lose all or part of their investment.

Controls and Procedures

Evaluation of disclosure controls and procedures:

Management is responsible for establishing and maintaining disclosure controls and procedures as defined under National Instrument 52-109. At December 31, 2018, the President and Chief Financial Officer concluded that the design and operation of these disclosure controls and procedures were effective and that material information relating to the Company, including its subsidiaries, was made known to them and was recorded, processed, summarized and reported within the time periods specified under applicable securities legislation.

Internal controls over financial reporting:

The President and Chief Financial Officer have designed or caused to be designed under their supervision, disclosure controls and procedures which provide reasonable assurance that material information regarding the Company is accumulated and communicated to the Company's management, including its President and Chief Financial Officer in a timely manner.

In addition, the President and Chief Financial Officer have designed or caused it to be designed under their supervision internal controls over financial reporting ("ICFR") to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements. The President and Chief Financial Officer have been advised that the control framework the President and the Chief Financial Officer used to design the Company's ICFR is recognized by the Committee of Sponsoring Organizations of the Treadway Commission.

The President and the Chief Financial Officer have evaluated, or caused to be evaluated under their supervision, whether or not there were changes to its ICFR during the period ended December 31, 2018 that have materially affected, or are reasonably likely to materially affect the Company's ICFR. No such changes were identified through their evaluation.

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 evaluations of controls can provide absolute assurance that all control issues, if any, within a company have been detected. Accordingly, our disclosure controls and procedures and our internal controls over financial reporting are effective in providing reasonable, not absolute, assurance that the objectives of our control systems have been met.