



THE DESCARTES SYSTEMS GROUP INC.
QUARTERLY REPORT TO SHAREHOLDERS

US GAAP FINANCIAL RESULTS FOR THE FIRST QUARTER OF FISCAL 2020

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MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

Our Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") contains references to Descartes using the words "we," "us," "our" and similar words and the reader is referred to using the words "you," "your" and similar words.

This MD&A also refers to our fiscal years. Our fiscal year commences on February 1st of each year and ends on January 31st of the following year. Our current fiscal year, which will end on January 31, 2020, is referred to as the "current fiscal year," "fiscal 2020," "2020" or using similar words. Our previous fiscal year, which ended on January 31, 2019, is referred to as the "previous fiscal year," "fiscal 2019," "2019" or using similar words. Other fiscal years are referenced by the applicable year during which the fiscal year ends. For example, 2021 refers to the annual period ending January 31, 2021 and the "fourth quarter of 2021" refers to the quarter ending January 31, 2021.

This MD&A, which is prepared as of May 29, 2019, covers our quarter ended April 30, 2019, as compared to our quarter ended April 30, 2018. You should read the MD&A in conjunction with our unaudited condensed consolidated financial statements for our first quarter of fiscal 2020 that appear elsewhere in this Quarterly Report to Shareholders. You should also read the MD&A in conjunction with our audited annual consolidated financial statements, related notes thereto and the related MD&A for fiscal 2019 that are included in our most recent annual report to shareholders (the "2019 Annual Report"), as filed on March 6, 2019.

We prepare and file our consolidated financial statements and MD&A in United States ("US") dollars and in accordance with US generally accepted accounting principles ("GAAP"). All dollar amounts we use in the MD&A are in US currency, unless we indicate otherwise.

We have prepared the MD&A with reference to the Form 51-102F1 MD&A disclosure requirements established under National Instrument 51-102 "Continuous Disclosure Obligations" ("NI 51-102") of the Canadian Securities Administrators. As it relates to our financial condition and results of operations for the interim period ended April 30, 2019, pursuant to NI 51-102, this MD&A updates the MD&A included in the 2019 Annual Report.

Additional information about us, including copies of our continuous disclosure materials such as our annual information form, is available on our website at <http://www.descartes.com>, through the EDGAR website at <http://www.sec.gov> or through the SEDAR website at <http://www.sedar.com>.

Certain statements made in this Annual Report to Shareholders, constitute forward-looking information for the purposes of applicable securities laws ("forward-looking statements"), including, but not limited to: statements in the "Trends / Business Outlook" section and statements regarding our expectations concerning future revenues and earnings, including potential variances from period to period; our expectations regarding the cyclical nature of our business; mix of revenues and potential variances from period to period; our plans to focus on generating services revenues yet to continue to allow customers to elect to license technology in lieu of subscribing to services; our expectations on losses of revenues and customers; our baseline calibration; our ability to keep our operating expenses at a level below our baseline revenues; our future business plans and business planning process; allocation of purchase price for completed acquisitions; our expectations regarding future restructuring charges and cost-reduction activities; expenses, including amortization of intangible assets and stock-based compensation; goodwill impairment tests and the possibility of future impairment adjustments; capital expenditures; acquisition-related costs; our liability with respect to various claims and suits arising in the ordinary course; any commitments referred to in the "Commitments, Contingencies and Guarantees" section of this MD&A; our intention to actively explore future business combinations and other strategic transactions; our liability under indemnification obligations; our reinvestment of earnings of subsidiaries back into such subsidiaries; our dividend policy; the sufficiency of capital to meet working capital, capital expenditure, debt repayment requirements and our anticipated growth strategy; our ability to raise capital; our adoption of certain

accounting standards; and other matters related to the foregoing. When used in this document, the words "believe," "plan," "expect," "anticipate," "intend," "continue," "may," "will," "should" or the negative of such terms and similar expressions are intended to identify forward-looking statements. These forward-looking statements are subject to risks and uncertainties and are based on assumptions that may cause future results to differ materially from those expected. The material assumptions made in making these forward-looking statements include the following: global shipment volumes continuing to increase at levels consistent with the average growth rates of the global economy; countries continuing to implement and enforce existing and additional customs and security regulations relating to the provision of electronic information for imports and exports; countries continuing to implement and enforce existing and additional trade restrictions and sanctioned party lists with respect to doing business with certain countries, organizations, entities and individuals; our continued operation of a secure and reliable business network; the continued availability of the data and content that is utilized in the delivery of services made available over our network; the stability of general economic and market conditions, currency exchange rates, and interest rates; equity and debt markets continuing to provide us with access to capital; our continued ability to identify and source attractive and executable business combination opportunities; our ability to develop solutions that keep pace with the continuing changes in technology, and our continued compliance with third party intellectual property rights. While management believes these assumptions to be reasonable under the circumstances, they may prove to be inaccurate. Such forward-looking statements also involve known and unknown risks, uncertainties and other factors that may cause our actual results, performance or achievements of, or developments in our business or industry, to differ materially from the anticipated results, performance or achievements or developments expressed or implied by such forward-looking statements. Such factors include, but are not limited to, the factors discussed under the heading "Certain Factors That May Affect Future Results" in this MD&A and in other documents filed with the Securities and Exchange Commission, the Ontario Securities Commission and other securities commissions across Canada from time to time. If any of such risks actually occur, they could materially adversely affect our business, financial condition or results of operations. In that case, the trading price of our common shares could decline, perhaps materially. Readers are cautioned not to place undue reliance upon any such forward-looking statements, which speak only as of the date made. Forward-looking statements are provided for the purpose of providing information about management's current expectations and plans relating to the future. Readers are cautioned that such information may not be appropriate for other purposes. Except as required by applicable law, we do not undertake or accept any obligation or undertaking to release publicly any updates or revisions to any forward-looking statements to reflect any change in our expectations or any change in events, conditions, assumptions or circumstances on which any such statements are based.

OVERVIEW

We use technology and networks to simplify complex business processes. We're primarily focused on logistics and supply chain management business processes. Our solutions are predominantly cloud-based and are focused on improving the productivity, performance and security of logistics-intensive businesses. Customers use our modular, software-as-a-service ("SaaS") and data solutions to route, schedule, track and measure delivery resources; plan, allocate and execute shipments; rate, audit and pay transportation invoices; access and analyze global trade data; research and perform trade tariff and duty calculations; file customs and security documents for imports and exports; and complete numerous other logistics processes by participating in a large, collaborative multi-modal logistics community. Our pricing model provides our customers with flexibility in purchasing our solutions either on a subscription, transactional or perpetual license basis. Our primary focus is on serving transportation providers (air, ocean and truck modes), logistics service providers (including third-party logistics providers, freight forwarders and customs brokers) and distribution-intensive companies for which logistics is either a key or a defining part of their own product or service offering, or for which our solutions can provide an opportunity to reduce costs, improve service levels, or support growth by optimizing the use of assets and information.

The Market

Logistics is the management of the flow of resources between a point of origin and a point of destination – processes that move items (such as goods, people, information) from point A to point B. Supply chain management is broader than logistics and includes the sourcing, procurement, conversion and storage of resources for consumption by an enterprise. Logistics and supply chain management have been evolving over the past several years as companies are increasingly seeking automation and real-time control of their supply chain activities. We believe companies are looking for integrated solutions for managing inventory in transit, conveyance units, people, data and business documents.

We believe logistics-intensive organizations are seeking to reduce operating costs, differentiate

themselves, improve margins, and better serve customers. Global trade and transportation processes are often manual and complex to manage. This is a consequence of the growing number of business partners participating in companies' global supply chains and a lack of standardized business processes.

Additionally, global sourcing, logistics outsourcing, imposition of additional customs and regulatory requirements and the increased rate of change in day-to-day business requirements are adding to the overall complexities that companies face in planning and executing in their supply chains. Whether a shipment is delayed at the border, a customer changes an order or a breakdown occurs on the road, there are increasingly more issues that can significantly impact the execution of fulfillment schedules and associated costs.

The rise of e-commerce has heightened these challenges for many suppliers with end-customers increasingly demanding narrower order-to-fulfillment periods, lower prices and greater flexibility in scheduling and rescheduling deliveries. End customers also want real-time updates on delivery status, adding considerable burden to supply chain management as process efficiency is balanced with affordable service.

In this market, the movement and sharing of data between parties involved in the logistics process is equally important to the physical movement of goods. Manual, fragmented and distributed logistics solutions are often proving inadequate to address the needs of operators. Connecting manufacturers and suppliers to carriers on an individual, one-off basis is too costly, complex and risky for organizations dealing with many trading partners. Further, many of these solutions do not provide the flexibility required to efficiently accommodate varied processes for organizations to remain competitive. We believe this presents an opportunity for logistics technology providers to unite this highly fragmented community and help customers improve efficiencies in their operations.

As the market continues to change, we've been evolving to meet our customers' needs. While the rate of adoption of newer logistics and supply chain management technologies is increasing, a large number of organizations still have manual business processes. We have been educating our prospects and customers on the value of connecting to trading partners through our Global Logistics Network ("GLN") and automating, as well as

standardizing, multi-party business processes. We believe that our target customers are increasingly looking for a single source, neutral, network-based solution provider who can help them manage the end-to-end shipment – from researching global trade information, to the booking of a shipment, to the tracking of that shipment as it moves, to the regulatory compliance filings to be made during the move and, finally, to the settlement and audit of the invoice.

Additionally, regulatory initiatives mandating electronic filing of shipment information with customs authorities require companies to automate aspects of their shipping processes to remain compliant and competitive. Our customs compliance technology helps shippers, transportation providers, freight forwarders and other logistics intermediaries to securely and electronically file shipment and tariff/duty information with customs authorities and self-audit their own efforts. Our technology also helps carriers and freight forwarders efficiently coordinate with customs brokers and agencies to expedite cross-border shipments. While many compliance initiatives started in the US, compliance has now become a global issue with significantly more international shipments crossing several borders on the way to their final destinations.

Increasingly, data and content have become central to supply chain planning and execution. Complex international supply chains are affected by logistics service provider performance, capacity, and productivity, as well as regulatory frameworks such as free trade agreements. We believe our Global Trade Data, Trade Regulations, Free-Trade-Agreement, and duty rate and calculation solutions help customers improve their sourcing, landed cost, and transportation lane and provider selection processes.

Solutions

Descartes' Logistics Technology Platform unites a growing global community of logistics-focused parties, allowing them to transact business while leveraging a broad array of applications designed to help logistics-intensive businesses thrive.

The Logistics Technology Platform fuses our GLN, an extensive logistics network covering multiple transportation modes, with a broad array of modular, interoperable web and wireless logistics management solutions. Designed to help accelerate time-to-value and increase productivity and performance for businesses of all sizes, the

Logistics Technology Platform leverages the GLN's multimodal logistics community to enable companies to quickly and cost-effectively connect and collaborate.

Descartes' GLN, the underlying foundation of the Logistics Technology Platform, manages the flow of data and documents that track and control inventory, assets and people in motion. Designed expressly for logistics operations, it is native to the particularities of different transportation modes and country borders. As a state-of-the-art messaging network with wireless capabilities, the GLN helps manage business processes in real-time and in-motion. Its capabilities go beyond logistics, supporting common commercial transactions, regulatory compliance documents, and customer specific needs.

The GLN extends its reach using interconnect agreements with other general and logistics-specific networks, to offer companies access to a wide array of trading partners. With the flexibility to connect and collaborate in unique ways, companies can effectively route or transform data to and from partners and deploy additional Descartes solutions on the GLN. The GLN allows "low tech" partners to act and respond with "high tech" capabilities and connect to the transient partners that exist in many logistics operations. This inherent adaptability creates opportunities to develop logistics business processes that can help customers differentiate themselves from their competitors.

Descartes' Logistics Application Suite offers a wide array of modular, cloud-based, interoperable web and wireless logistics management applications. These solutions embody Descartes' deep domain expertise, not merely "check box" functionality. These solutions deliver value for a broad range of logistics-intensive organizations, whether they purchase transportation, run their own fleet, operate globally or locally, or work across air, ocean or ground transportation. Descartes' comprehensive suite of solutions includes:

- Routing, Mobile and Telematics;
- Transportation Management and e-commerce enablement;
- Customs & Regulatory Compliance;
- Trade Data;
- Global Logistics Network Services; and
- Broker & Forwarder Enterprise Systems.

The Descartes applications forming part of the Logistics Technology Platform are modular and

interoperable to allow organizations the flexibility to deploy them quickly within an existing portfolio of solutions. Implementation is streamlined because these solutions use web-native or wireless user interfaces and are pre-integrated with the GLN. With interoperable and multi-party solutions, Descartes' solutions are designed to deliver functionality that can enhance a logistics operation's performance and productivity both within the organization and across a complex network of partners.

Descartes' expanding global trade content offering unites systems and people with trade information to enable organizations to work smarter by making more informed supply chain and logistics decisions. Our content solutions can help customers: research and analyze global trade movements, regulations and trends; reduce the risk of transacting with denied parties; increase trade compliance rates; optimize sourcing, procurement, and business development strategies; and minimize duty spend.

Descartes' GLN community members enjoy extended command of operations and accelerated time-to-value relative to many alternative logistics solutions. Given the inter-enterprise nature of logistics, quickly gaining access to partners is paramount. For this reason, Descartes has focused on growing a community that strategically attracts and retains relevant logistics parties. Upon joining the GLN community, many companies find that a number of their trading partners are already members with an existing connection to the GLN. This helps to minimize the time required to integrate Descartes' logistics management applications and to begin realizing results. Descartes is committed to continuing to expand community membership. Companies that join the GLN community or extend their participation find a single place where their entire logistics network can exist regardless of the range of transportation modes, the number of trading partners or the variety of regulatory agencies.

Sales and Distribution

Our sales efforts are primarily directed towards two specific customer markets: (a) transportation companies and logistics service providers; and (b) manufacturers, retailers, distributors and mobile business service providers. Our sales staff is regionally based and trained to sell across our solutions to specific customer markets. In North America and Europe, we promote our products primarily through direct sales efforts aimed at existing and potential users of our products. In the

Asia Pacific, Indian subcontinent, South America and African regions, we focus on making our channel partners successful. Channel partners for our other international operations include distributors, alliance partners and value-added resellers.

United by Design

Descartes' 'United By Design' strategic alliance program is intended to ensure complementary hardware, software and network offerings are interoperable with Descartes' solutions and work together seamlessly to solve multi-party business problems.

'United By Design' is intended to create a global ecosystem of logistics-intensive organizations working together to standardize and automate business processes and manage resources in motion. The program centers on Descartes' Open Standard Collaborative Interfaces, which provide a wide variety of connectivity mechanisms to integrate a broad spectrum of applications and services.

Descartes has partnering relationships with multiple parties across the following three categories:

- Technology Partners - Complementary hardware, software, network, and embedded technology providers that extend the functional breadth of Descartes' solution capabilities;
- Consulting Partners - Large system integrators and enterprise resource planning system vendors through to vertically specialized or niche consulting organizations that provide domain expertise and/or implementation services for Descartes' solutions; and
- Channel Partners (Value-Added Resellers) - Organizations that market, sell, implement and support Descartes' solutions to extend access and expand market share into territories and markets where Descartes might not have a focused direct sales presence.

Marketing

Our marketing efforts are focused on growing demand for our solutions and establishing Descartes as a thought leader and innovator across the markets we serve. Marketing programs are delivered through integrated initiatives designed to reach our target customer and prospect groups. These programs include digital and online

marketing, trade shows and user group events, partner-focused campaigns, proactive media relations, and direct corporate marketing efforts.

Fiscal 2020 Highlights

On February 12, 2019, Descartes acquired substantially all of the assets of the businesses run by the Management Systems Resources Inc. group of companies (collectively, "Visual Compliance"), a provider of software solutions and services to automate customs, trade and fiscal compliance processes including denied and restricted party screening processes and export licensing. The purchase price for the acquisition was approximately \$248.9 million, net of cash acquired, which was funded from a combination of drawing on Descartes' existing credit facility and issuing to the sellers 0.3 million Descartes common shares from treasury.

On May 10, 2019, Descartes acquired Core Transport Technologies NZ Limited ("CORE"), an electronic transportation network that provides global air carriers and ground handlers with shipment scanning and tracking solutions. The purchase price for the acquisition was approximately \$22.0 million, net of cash acquired, which was funded from drawing on Descartes' existing credit facility. Additional contingent consideration of up to \$9.0 million in cash is payable if certain revenue performance targets are met by CORE in the two years following the acquisition.

CONSOLIDATED OPERATIONS

The following table shows, for the periods indicated, our results of operations in millions of dollars (except per share and weighted average share amounts):

	First Quarter of	
	2020	2019
Total revenues	78.0	67.0
Cost of revenues	19.9	18.6
Gross margin	58.1	48.4
Operating expenses	31.3	27.9
Other charges	2.1	1.1
Amortization of intangible assets	12.8	9.6
Income from operations	11.9	9.8
Investment income	0.1	0.1
Interest expense	(2.2)	(0.6)
Income before income taxes	9.8	9.3
Income tax expense		
Current	1.7	2.0
Deferred	0.8	0.3
Net income	7.3	7.0
EARNINGS PER SHARE		
BASIC	0.09	0.09
DILUTED	0.09	0.09
WEIGHTED AVERAGE SHARES OUTSTANDING (thousands)		
BASIC	77,149	76,793
DILUTED	78,273	77,650

Total revenues consist of *license revenues*, *services revenues* and *professional services and other revenues*. License revenues are derived from licenses granted to our customers to use our software products. Services revenues are comprised of ongoing transactional and/or subscription fees for use of our services and products by our customers and maintenance, which include revenues associated with maintenance and support of our services and products. Professional services and other revenues are comprised of professional services revenues from consulting, implementation and training services related to our services and products, hardware revenues and other revenues.

The following table provides additional analysis of our revenues by type (in millions of dollars and as a percentage of total revenues) generated over each of the periods indicated:

	First Quarter of	
	2019	2018
License	2.3	1.9
<i>Percentage of total revenues</i>	3%	3%
Services	67.0	57.8
<i>Percentage of total revenues</i>	86%	86%
Professional services and other	8.7	7.3
<i>Percentage of total revenues</i>	11%	11%
Total revenues	78.0	67.0

Our **license revenues** were \$2.3 million and \$1.9 million for the first quarter of 2020 and 2019, respectively, representing 3% of total revenues for both the first quarter of 2020 and 2019. While our sales focus has been on generating services revenues in our SaaS business model, we continue to see a market for licensing the products in our omni-channel retailing and home delivery logistics solutions. The amount of license revenues in a period is dependent on our customers' preference to license our solutions instead of purchasing our solutions as a service and we anticipate variances from period to period.

Our **services revenues** were \$67.0 million and \$57.8 million for the first quarter of 2020 and 2019, respectively, representing 86% of total revenues for both the first quarter of 2020 and 2019. The increase in the first quarter of 2020 as compared to the same period of 2019 was primarily due to the inclusion of a full period of services revenues from the fiscal 2019 acquisitions of Velocity Mail, LLC ("Velocity Mail") and PinPoint GPS Solutions Inc. ("PinPoint"), as well as partial period of services revenues from the fiscal 2020 acquisition of Visual Compliance. Services revenues in the first quarter of 2020 were also positively impacted by the growth in revenue from new and existing customers in both transactional and subscription products. Services revenues in the first quarter of 2020 as compared to the same period of 2019 were negatively impacted by the weakening of the euro, Canadian dollar and British pound sterling compared to the US dollar.

Our **professional services and other revenues** were \$8.7 million and \$7.3 million for the first quarter of 2020 and 2019, respectively, representing 11% of total revenues for both the first quarter of 2020 and 2019. The increase in the first quarter of 2020 as compared to the same period of 2019 was primarily due to the inclusion of a partial period of services revenues from the fiscal 2020 acquisition of Visual Compliance. Professional services and other revenues in the first quarter of 2020 as compared to the same period of 2019 were negatively impacted by the weakening of the euro, Canadian dollar and British pound sterling compared to the US dollar.

We operate in one business segment providing logistics technology solutions. The following table provides additional analysis of our revenues by geographic location of customer (in millions of dollars and as a percentage of total revenues):

	First Quarter of	
	2020	2019
United States	48.8	39.5
<i>Percentage of total revenues</i>	63%	59%
Europe, Middle-East and Africa ("EMEA")	19.4	20.7
<i>Percentage of total revenues</i>	25%	31%
Canada	6.7	3.7
<i>Percentage of total revenues</i>	8%	5%
Asia Pacific	3.1	3.1
<i>Percentage of total revenues</i>	4%	5%
Total revenues	78.0	67.0

Revenues from the United States were \$48.8 million and \$39.5 million for the first quarter of 2020 and 2019, respectively. The increase in the first quarter of 2020 as compared to the same period of 2019 was primarily a result of the inclusion of a full period of revenues from the 2019 acquisitions of Velocity Mail as well as a partial period of revenues from the fiscal 2020 acquisition of Visual Compliance. Revenues in the first quarter of 2020 were also positively impacted by the growth in sales of transactional, subscription and professional services products.

Revenues from the EMEA region were \$19.4 million and \$20.7 million for the first quarter of 2020 and 2019, respectively. The decrease in the first quarter of 2020 as compared to the same period of 2019 was primarily a result of the weakening of the euro and British pound sterling compared to the US dollar.

Revenues from Canada were \$6.7 million and \$3.7 million for the first quarter of 2020 and 2019, respectively. The increase in the first quarter of 2020 as compared to the same period of 2019 was primarily a result of the inclusion of a full period of revenues from the 2019 acquisition of PinPoint as well as a partial period of revenues from the fiscal 2020 acquisition of Visual Compliance. The increase in revenues was partially offset by the weakening of the Canadian dollar compared to the US dollar.

Revenues from the Asia Pacific region were \$3.1 million for both the first quarter of 2020 and 2019.

The following table provides analysis of cost of revenues (in millions of dollars) and the related gross margins for the periods indicated:

	First Quarter of	
	2020	2019
<u>License</u>		
License revenues	2.3	1.9
Cost of license revenues	0.2	0.2
Gross margin	2.1	1.7
<i>Gross margin percentage</i>	91%	89%
<u>Services</u>		
Services revenues	67.0	57.8
Cost of services revenues	15.4	13.9
Gross margin	51.6	43.9
<i>Gross margin percentage</i>	77%	76%
<u>Professional services and other</u>		
Professional services and other revenues	8.7	7.3
Cost of professional services and other revenues	4.3	4.5
Gross margin	4.4	2.8
<i>Gross margin percentage</i>	51%	38%
<u>Total</u>		
Revenues	78.0	67.0
Cost of revenues	19.9	18.6
Gross margin	58.1	48.4
<i>Gross margin percentage</i>	74%	72%

Cost of license revenues consists of costs related to our sale of third-party technology, such as third-party map license fees and royalties.

Gross margin percentage for license revenues was 91% and 89% for the first quarter of 2020 and 2019, respectively. Our gross margin on license revenues is dependent on the proportion of our license revenues that involve third-party technology. The margin in the first quarter of 2020 compared to the same period of 2019 was positively impacted by a lower proportion of our license revenues that involved third-party technology.

Cost of services revenues consists of internal costs of running our systems and applications and other personnel-related expenses incurred in providing maintenance, including customer support.

Gross margin percentage for services revenues was 77% and 76% for the first quarter of 2020 and 2019, respectively. The margin in the first quarter of 2020 compared to the same period of 2019 was positively impacted by the fiscal 2020 acquisition of Visual Compliance.

Cost of professional services and other revenues consists of personnel-related expenses incurred in providing professional services, hardware installation as well as hardware costs.

Gross margin percentage for professional services and other revenues was 51% and 38% for the first quarter of 2020 and 2019, respectively. The margin in the first quarter of 2020 was positively impacted by an increased proportion of professional services revenues. Hardware installation revenues

typically have lower margins than our professional services revenues and as such we anticipate variances in gross margin from period to period as a result of the sales mix.

Operating expenses, consisting of sales and marketing, research and development and general and administrative expenses, were \$31.3 million and \$27.9 million for the first quarter of 2020 and 2019, respectively. The increase in operating expenses in the first quarter of 2020 as compared to the same period of 2019 was primarily due to operating expenses from the fiscal 2019 acquisitions of Velocity Mail and PinPoint as well as the fiscal 2020 acquisition of Visual Compliance. Operating expenses in the first quarter of 2020 compared to the same period of 2019 were positively impacted by the weakening of the euro, Canadian dollar and British pound sterling compared to the US dollar.

The following table provides analysis of operating expenses (in millions of dollars and as a percentage of total revenues) for the periods indicated:

	First Quarter of	
	2020	2019
Total revenues	78.0	67.0
Sales and marketing expenses	10.1	9.1
<i>Percentage of total revenues</i>	13%	14%
Research and development expenses	12.7	11.9
<i>Percentage of total revenues</i>	16%	18%
General and administrative expenses	8.5	6.9
<i>Percentage of total revenues</i>	11%	10%
Total operating expenses	31.3	27.9
<i>Percentage of total revenues</i>	40%	42%

Sales and marketing expenses include salaries, commissions, stock-based compensation and other personnel-related costs, bad debt expenses, travel expenses, advertising programs and services, and other promotional activities associated with selling and marketing our services and products. Sales and marketing expenses were \$10.1 million and \$9.1 million for the first quarter of 2020 and 2019, respectively, representing 13% and 14% of total revenues for the first quarter of 2020 and 2019, respectively. The increase in sales and marketing expenses in the first quarter of 2020 as compared to the same period of 2019 was primarily due to the inclusion of sales and marketing expenses from the 2019 acquisitions of Velocity Mail and PinPoint as well as the fiscal 2020 acquisition of Visual Compliance. Sales and marketing expenses in the first quarter of 2020 as compared to the same period of 2019 were positively impacted by the weakening of the euro, Canadian dollar and British pound sterling compared to the US dollar.

Research and development expenses consist primarily of salaries, stock-based compensation and other personnel-related costs of technical and engineering personnel associated with our research and product development activities, as well as costs for third-party outsourced development providers. We expensed all costs related to research and development in the first quarter of 2020 and 2019. Research and development expenses were \$12.7 million and \$11.9 million for the first quarter of 2020 and 2019, respectively, representing 16% and 18% of total revenues in the first quarter of 2020 and 2019, respectively. The increase in research and development expenses in the first quarter of 2020 as compared to the same period of 2019 was primarily attributable to increased payroll and related costs from the fiscal 2019 acquisition of Velocity Mail as well as the fiscal 2020 acquisition of Visual Compliance. Research and development expenses in the first quarter of 2020 as compared to the same period of 2019 were positively impacted by the weakening of the euro and Canadian dollar compared to the US dollar.

General and administrative expenses consist primarily of salaries, stock-based compensation and other personnel-related costs of administrative personnel, as well as professional fees and other administrative expenses. General and administrative costs were \$8.5 million and \$6.9 million for the first quarter of 2020 and 2019, respectively, representing 11% and 10% of total revenues for the first quarter of 2020 and 2019, respectively. The increase in general and administrative expenses in the first quarter of 2020 as compared to the same period of 2019 was primarily attributable to the inclusion of general and administrative expenses from the fiscal 2019 acquisition of PinPoint as well as the fiscal 2020 acquisition of Visual Compliance. General and administrative expenses in the first quarter of 2020 as compared to the same period of 2019 were positively impacted by the weakening of the euro and Canadian dollar compared to the US dollar.

Other charges consist primarily of acquisition-related costs with respect to completed and prospective acquisitions and restructuring charges. Acquisition-related costs primarily include advisory services, brokerage services, administrative costs and retention bonuses, and relate to completed and prospective acquisitions. Restructuring costs relate to the integration of previously completed acquisitions and other cost-reduction activities. Other charges were \$2.1 million and \$1.1 million for the first quarter of 2020 and 2019. Other charges were comprised of acquisition-related costs of \$2.1 million and \$1.1 million for the first quarter of 2020 and 2019, respectively. The increase in other charges in the first quarter of 2020 compared to the same period of 2019 was primarily a result of additional acquisition-related costs primarily attributed to the acquisition of Visual Compliance.

Amortization of intangible assets is amortization of the value attributable to intangible assets, including customer agreements and relationships, non-compete covenants, existing technologies and trade names, in each case associated with acquisitions completed by us as of the end of each reporting period. Intangible assets with a finite life are amortized to income over their useful life. The amount of amortization expense in a fiscal period is dependent on our acquisition activities as well as our asset impairment tests. Amortization of intangible assets was \$12.8 million and \$9.6 million in the first quarter of 2020 and 2019, respectively. The increase in amortization expense in the first quarter of 2020 compared to the same period of 2019 is primarily attributable to amortization expense from the fiscal 2019 acquisitions of Velocity Mail and PinPoint and the fiscal 2020 acquisition of Visual Compliance. As at April 30, 2019, the unamortized portion of all intangible assets was \$266.7 million.

We test the carrying value of our finite life intangible assets for recoverability when events or changes in circumstances indicate that there may be evidence of impairment. We write down intangible assets or asset groups with a finite life to fair value when the related undiscounted cash flows are not expected to allow for recovery of the carrying value. Fair value of intangible assets or asset groups is determined by discounting the expected related cash flows. No finite life intangible asset or asset group impairment has been identified or recorded for any of the fiscal periods reported.

Investment income was \$0.1 million in both the first quarter of 2020 and 2019.

Interest expense was \$2.2 million and \$0.6 million in the first quarter of 2020 and 2019, respectively. Interest expense is primarily comprised of interest expense on the amount borrowed and outstanding on our revolving debt facility, debt standby charges as well as the amortization of deferred financing charges. Interest expense increased in the first quarter of 2020 compared to the same period of 2019 as a result of higher average interest rates and a higher debt balance due to additional debt facility borrowings to fund the acquisitions of Velocity Mail, PinPoint and Visual Compliance.

Income tax expense is comprised of current and deferred income tax expense. Income tax expense for the first quarter of 2020 and 2019 was 26% and 25% of income before income taxes, respectively, with current income tax expense for the same periods being 18% and 21% of income before income taxes, respectively.

Income tax expense – current was \$1.7 million and \$2.0 million in the first quarter of 2020 and 2019, respectively. Current income taxes arise primarily from income that is not fully sheltered by loss carry-forwards or other tax attributes. Current income tax expense decreased in the first quarter of 2020 as

compared to the same period of 2019 primarily due to more income being sheltered by tax attributes in Canada.

Income tax expense – deferred was \$0.8 million and \$0.3 million in the first quarter of 2020 and 2019, respectively. Deferred income tax expense increased in the first quarter of 2020 as compared to the same period of 2019 primarily due to the use of tax attributes in Canada related to the acquisition of Visual Compliance.

Net income was \$7.3 million and \$7.0 million for the first quarter of 2020 and 2019, respectively.

QUARTERLY OPERATING RESULTS

The following table provides an analysis of our unaudited operating results (in thousands of dollars, except per share and weighted average number of share amounts) for each of the quarters indicated:

	Fiscal 2018			Fiscal 2019			Fiscal 2020	
	Second Quarter	Third Quarter	Fourth Quarter	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	First Quarter
Revenues	57,293	62,001	63,631	67,018	67,115	70,008	71,030	78,004
Gross margin	41,946	45,158	46,499	48,434	49,154	50,858	51,731	58,148
Operating expenses	23,942	26,450	27,483	27,997	28,358	29,144	29,258	31,338
Net income	7,159	6,170	6,665	6,986	8,498	7,901	7,892	7,320
Basic earnings per share	0.09	0.08	0.09	0.09	0.11	0.10	0.10	0.09
Diluted earnings per share	0.09	0.08	0.09	0.09	0.11	0.10	0.10	0.09
Weighted average shares outstanding (thousands):								
Basic	75,969	76,630	76,773	76,793	76,816	76,854	76,865	77,149
Diluted	76,739	77,442	77,616	77,650	77,781	77,863	77,842	78,273

Revenues over the comparative periods have been positively impacted by the seven acquisitions that we have completed since the beginning of fiscal 2018 through the end of the first quarter of fiscal 2020. In addition, we have seen increased revenues as a result of an increase in transactions processed over our GLN business document exchange as we help our customers comply with electronic filing requirements of US, Canadian, EU and Asian security and customs regulations.

Our services revenues continue to have minor seasonal trends. In the first fiscal quarter of each year, we historically have seen slightly lower shipment volumes by air and truck which impact the aggregate number of transactions flowing through our GLN business document exchange. In the second fiscal quarter of each year, we historically have seen a slight increase in ocean services revenues as ocean carriers are in the midst of their customer contract negotiation period. In the third fiscal quarter of each year, we have historically seen shipment and transactional volumes at their highest. In the fourth fiscal quarter of each year, the various international holidays impact the aggregate number of shipping days in the quarter, and historically we have seen this adversely impact the number of transactions our network processes and, consequently, the amount of services revenues we receive during that period. In the second and fourth fiscal quarters of each year, we historically have seen a slight decrease in professional services revenues due to various international holidays and vacation seasons. Overall, the impact of seasonal trends has a relatively minor impact on our revenues quarter to quarter.

In the first quarter of 2020 revenues and gross margin were positively impacted by a partial quarter of operations from our acquisition of Visual Compliance as well as increased transactional and subscription revenues. Revenues decreased, and operating expenses increased, in the first quarter of 2020 on a quarter

to quarter basis by the weakening of the euro, Canadian dollar and British pound sterling compared to the US dollar. Operating expenses also increased because of the inclusion of a partial quarter of operations from our acquisition of Visual Compliance. Net income was lowered by additional amortization as a result of the acquisition of Visual Compliance as well as additional interest expense and acquisition-related costs.

LIQUIDITY AND CAPITAL RESOURCES

Cash. We had \$29.6 million and \$27.3 million in cash as at April 30, 2019 and January 31, 2019, respectively. All cash was held in interest-bearing bank accounts, primarily with major Canadian, US and European banks. The cash balance increased from January 31, 2019 to April 30, 2019 by \$2.3 million primarily due to cash generated from operations partially offset by credit facility repayments.

Credit facility. On January 25, 2019, we amended and increased our existing \$150.0 million senior secured revolving credit facility. The newly amended and increased facility is now a \$350.0 million revolving operating credit facility to be available for general corporate purposes, including the financing of ongoing working capital needs and acquisitions. With the approval of the lenders, the credit facility can be expanded to a total of \$500.0 million. The credit facility has a five-year maturity with no fixed repayment dates prior to the end of the five-year term ending January 2024. Borrowings under the credit facility are secured by a first charge over substantially all of Descartes' assets. Depending on the type of advance, interest rates under the revolving operating portion of the credit facility are based on the Canada or US prime rate, Bankers' Acceptance (BA) or London Interbank Offered Rate (LIBOR) plus an additional 0 to 250 basis points based on the ratio of net debt to adjusted earnings before interest, taxes, depreciation and amortization, as defined in the credit agreement. A standby fee of between 20 to 40 basis points will be charged on all undrawn amounts. The credit facility contains certain customary representations, warranties and guarantees, and covenants.

As at April 30, 2019, \$107.3 million of the revolving operating credit facility remained available for use and the outstanding balance of \$242.7 million was required to be repaid in January 2024. Subsequent to April 30, 2019, an additional \$22.3 million was drawn on the credit facility to finance the acquisition of CORE on May 10, 2019. We were in compliance with the covenants of the credit facility as at April 30, 2019 and remain in compliance as of the date of this MD&A.

Short-form base shelf prospectus. On June 6, 2018, we filed a final short-form base shelf prospectus (the "Base Shelf Prospectus"), allowing us to offer and issue the following securities: (i) common shares; (ii) preferred shares; (iii) senior or subordinated unsecured debt securities; (iv) subscription receipts; (v) warrants; and (vi) securities comprised of more than one of the aforementioned common shares, preferred shares, debt securities, subscription receipts and/ or warrants offered together as a unit. These securities may be offered separately or together, in separate series, in amounts, at prices and on terms to be set forth in one or more shelf prospectus supplements. The aggregate initial offering price of securities that may be sold by us (or certain of our current or future shareholders) pursuant to the Base Shelf Prospectus during the 25-month period that the Base Shelf Prospectus, including any amendments thereto, remains valid is limited to an aggregate of \$750 million.

Working capital. As at April 30, 2019, our working capital deficit (current assets less current liabilities) was (\$5.4) million. Current assets primarily include \$29.6 million of cash, \$33.9 million of current trade receivables and \$12.3 million of prepaid assets. Current liabilities primarily include \$41.5 million of deferred revenue, \$34.1 million of accrued liabilities and \$5.3 million of accounts payable. Our working capital has decreased since January 31, 2019 by \$7.3 million, primarily due to cash used for credit facility repayments partially offset by cash generated from operations during the period.

Historically, we've financed our operations and met our capital expenditure requirements primarily through cash flows provided from operations, issuances of common shares and proceeds from debt. We anticipate that, considering the above, we have sufficient liquidity to fund our current cash requirements for working

capital, contractual commitments, capital expenditures and other operating needs. We also believe that we have the ability to generate sufficient amounts of cash in the long term to meet planned growth targets and to fund strategic transactions. Should additional future financing be undertaken, the proceeds from any such transaction could be utilized to fund strategic transactions or for general corporate purposes, including the repayment of outstanding debt. We expect, from time to time, to continue to consider select strategic transactions to create value and improve performance, which may include acquisitions, dispositions, restructurings, joint ventures and partnerships, and we may undertake further financing transactions, including draws on our credit facility or equity offerings, in connection with any such potential strategic transaction.

With respect to earnings of our non-Canadian subsidiaries, our intention is that these earnings will be reinvested in each subsidiary indefinitely. Of the \$29.6 million of cash as at April 30, 2019, \$25.9 million was held by our foreign subsidiaries, most significantly in the United States with lesser amounts held in other countries in the EMEA and Asia Pacific regions. To date, we have not encountered significant legal or practical restrictions on the abilities of our subsidiaries to repatriate money to Canada, even if such restrictions may exist in respect of certain foreign jurisdictions where we have subsidiaries. In the future, if we elect to repatriate the unremitted earnings of our foreign subsidiaries in the form of dividends, or if the shares of the foreign subsidiaries are sold or transferred, then we could be subject to additional Canadian or foreign income taxes, net of the impact of any available foreign tax credits, which would result in a higher effective tax rate. We have not provided for foreign withholding taxes or deferred income tax liabilities related to unremitted earnings of our non-Canadian subsidiaries, since such earnings are considered permanently invested in those subsidiaries, or are not subject to withholding taxes.

The table set forth below provides a summary of cash flows for the periods indicated in millions of dollars:

	Three Months Ended	
	April 30, 2019	April 30, 2018
Cash provided by operating activities	23.4	18.9
Additions to property and equipment	(1.4)	(1.0)
Acquisition of subsidiaries, net of cash acquired	(239.8)	(32.4)
Proceeds from borrowing on credit facility	241.2	33.2
Credit facility repayments	(19.9)	(17.6)
Payment of debt issuance costs	(1.4)	-
Issuance of common shares, net of issuance costs	0.7	0.5
Effect of foreign exchange rate on cash	(0.5)	(0.5)
Net change in cash	2.3	1.1
Cash, beginning of period	27.3	35.1
Cash, end of period	29.6	36.2

Cash provided by operating activities was \$23.4 million and \$18.9 million for the first quarter of 2020 and 2019, respectively. For the first quarter of 2020, the \$23.4 million of cash provided by operating activities resulted from \$7.3 million of net income, plus adjustments for \$15.2 million of non-cash items included in net income and plus \$0.9 million of cash provided from changes in our operating assets and liabilities. For the first quarter of 2019, the \$18.9 million of cash provided by operating activities resulted from \$7.0 million of net income, plus adjustments for \$11.5 million of non-cash items included in net income and plus \$0.4 million of cash provided from changes in our operating assets and liabilities. Cash provided by operating activities increased in the first quarter of 2020 compared to the same period of 2019 primarily due to an increase in net income adjusted for non-cash items.

Additions to property and equipment were \$1.4 million and \$1.0 million for first quarter of 2020 and 2019, respectively. Additions to property and equipment were greater in the first quarter of 2020 compared to the same period of 2019 as a result of additional investments in computing equipment and software to support our network and build out our security infrastructure.

Acquisition of subsidiaries, net of cash acquired was \$239.8 million and \$32.4 million for the first quarter of 2020 and 2019, respectively. In the first quarter of 2020 we acquired Visual Compliance and in the first quarter of 2019 we acquired Aljex.

Proceeds from borrowing on credit facility were \$241.2 million and \$33.2 million for the first quarter of 2020 and 2019, respectively. In the first quarter of 2020, the borrowings on our credit facility financed the acquisition of Visual Compliance. In the first quarter of 2019, the borrowings on our credit facility financed the acquisition of Aljex.

Credit facility repayments were \$19.9 million and \$17.6 million for the first quarter of 2020 and 2019, respectively.

Payment of debt issuance costs were \$1.4 million and nil for the first quarter of 2020 and 2019, respectively, and relate to costs paid in amending the terms of our credit facility agreement.

Issuance of common shares, net of issuance costs of \$0.7 million and \$0.5 million for the first quarter of 2020 and 2019, respectively, as a result of the exercise of employee stock options.

COMMITMENTS, CONTINGENCIES AND GUARANTEES

Commitments

To facilitate a better understanding of our commitments, the following information is provided (in millions of dollars) in respect of our operating obligations as of April 30, 2019:

	Less than 1 year	1-3 years	4-5 years	More than 5 years	Total
Debt obligations	-	-	242.7	-	242.7
Operating lease obligations	3.7	4.6	2.4	1.0	11.7
Total	3.7	4.6	245.1	1.0	254.4

Debt Obligations

The debt obligations are comprised of principal repayments on our credit facility. Interest, not included in the table above, is payable quarterly in arrears based on the applicable variable rate.

Lease Obligations

We are committed under non-cancelable operating leases for buildings, vehicles and computer equipment with terms expiring at various dates through 2027. The future minimum amounts payable under these lease agreements are presented in the table above.

Other Obligations

Deferred Share Unit ("DSU") and Cash-settled Restricted Share Unit ("CRSU") Plans

As discussed in the "Trends / Business Outlook" section later in this MD&A and in Note 2 to the audited consolidated financial statements for 2019 included in our 2019 Annual Report, we maintain DSU and CRSU plans for our directors and employees. Any payments made pursuant to these plans are settled in cash. For DSUs and CRSUs, the units vest over time and the liability recognized at any given consolidated balance sheet date reflects only those units vested at that date that have not yet been settled in cash. As such, we had an unrecognized aggregate amount for the unvested CRSUs of \$1.6 million at April 30, 2019. As at April 30, 2019 there were no unvested DSUs. The ultimate liability for any payment of DSUs and CRSUs is dependent on the trading price of our common shares. To partially offset our exposure to fluctuations in our stock price, we have entered into equity derivative contracts, including floating-rate equity forwards. As at April 30, 2019, we had equity derivatives for 273,000 Descartes common shares

and a DSU liability for 279,340 Descartes common shares, resulting in minimal net exposure resulting from changes to our share price.

Contingencies

We are subject to a variety of other claims and suits that arise from time to time in the ordinary course of our business. The consequences of these matters are not presently determinable but, in the opinion of management after consulting with legal counsel, the ultimate aggregate liability is not currently expected to have a material effect on our results of operations or financial position.

Product Warranties

In the normal course of operations, we provide our customers with product warranties relating to the performance of our hardware, software and services. To date, we have not encountered material costs as a result of such obligations and have not accrued any liabilities related to such obligations in our consolidated financial statements.

Business combination agreements

In respect of our acquisitions of Appterra LLC, Z-Firm LLC ("ShipRush") and PinPoint, up to \$3.8 million in cash may become payable if certain revenue performance targets are met in the two years following the acquisition. A balance of \$2.2 million is accrued related to the fair value of this contingent consideration as at April 30, 2019.

Guarantees

In the normal course of business, we enter into a variety of agreements that may contain features that meet the definition of a guarantee under ASC Topic 460, "Guarantees". The following lists our significant guarantees:

Intellectual property indemnification obligations

We provide indemnifications of varying scope to our customers against claims of intellectual property infringement made by third parties arising from the use of our products. In the event of such a claim, we are generally obligated to defend our customers against the claim and we are liable to pay damages and costs assessed against our customers that are payable as part of a final judgment or settlement. These intellectual property infringement indemnification clauses are not generally subject to any dollar limits and remain in force for the term of our license agreement with our customer, which license terms are typically perpetual. Historically, we have not encountered material costs as a result of such indemnification obligations.

Other indemnification agreements

In the normal course of operations, we enter into various agreements that provide general indemnities. These indemnities typically arise in connection with purchases and sales of assets, securities offerings or buy-backs, service contracts, administration of employee benefit plans, retention of officers and directors, membership agreements, customer financing transactions, and leasing transactions. In addition, our corporate by-laws provide for the indemnification of our directors and officers. Each of these indemnities requires us, in certain circumstances, to compensate the counterparties for various costs resulting from breaches of representations or obligations under such arrangements, or as a result of third party claims that may be suffered by the counterparty as a consequence of the transaction. We believe that the likelihood that we could incur significant liability under these obligations is remote. Historically, we have not made any significant payments under such indemnities.

In evaluating estimated losses for the guarantees or indemnities described above, we consider such factors as the degree of probability of an unfavorable outcome and the ability to make a reasonable estimate of the amount of loss. We are unable to make a reasonable estimate of the maximum potential amount payable under such guarantees or indemnities as many of these arrangements do not specify a maximum potential dollar exposure or time limitation. The amount also depends on the outcome of future events and conditions, which cannot be predicted. Given the foregoing, to date, we have not accrued any liability in our financial statements for the guarantees or indemnities described above.

OUTSTANDING SHARE DATA

We have an unlimited number of common shares authorized for issuance. As of May 29, 2019, we had 77,222,956 common shares issued and outstanding.

At the annual meeting of shareholders held on May 26, 2016, the shareholders of the Corporation approved the addition of 4,500,000 options to the Corporation's stock option plan. As of May 29, 2019, there were 1,178,992 options issued and outstanding, and 3,643,874 remaining available for grant under all stock option plans.

At the annual meeting of shareholders held on June 1, 2017, the shareholders of the Corporation approved the addition of a further 1,500,000 units to the Corporation's performance and restricted share unit plan. As of May 29, 2019, there were 629,874 performance share units ("PSUs") and 374,874 restricted share units ("RSUs") issued and outstanding, and 1,274,392 remaining available for grant under all performance and restricted share unit plans.

On November 30, 2004, we announced that our board of directors had adopted a shareholder rights plan (the "Rights Plan") to ensure the fair treatment of shareholders in connection with any take-over offer, and to provide our board of directors and shareholders with additional time to fully consider any unsolicited take-over bid. We did not adopt the Rights Plan in response to any specific proposal to acquire control of the Company. The Rights Plan was approved by the TSX and was originally approved by our shareholders on May 18, 2005. The Rights Plan took effect as of November 29, 2004. An amended and restated Rights Plan was ratified by shareholders at our annual shareholders' meeting held on June 1, 2017. We understand that the Rights Plan is similar to plans adopted by other Canadian companies and approved by their shareholders.

APPLICATION OF CRITICAL ACCOUNTING POLICIES

Our consolidated financial statements and accompanying notes are prepared in accordance with GAAP. Preparing financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenues and expenses. These estimates and assumptions are affected by management's application of accounting policies. Estimates are deemed critical when a different estimate could have reasonably been used or where changes in the estimates are reasonably likely to occur from period to period and would materially impact our financial condition or results of operations. Our significant accounting policies are discussed in Note 2 to the audited consolidated financial statements for 2019 included in our 2019 Annual Report.

Our management has discussed the development, selection and application of our critical accounting policies with the audit committee of the board of directors.

In addition to those identified in our 2019 Annual Report, the following reflect our more significant estimates, judgments and assumptions which we believe are the most critical to aid in fully understanding and evaluating our reported financial results for the period ended April 30, 2019:

- Revenue recognition, costs to obtain a contract, contract assets and liabilities;
- Impairment of long-lived assets;
- Goodwill;
- Stock-based compensation;
- Income taxes; and
- Business combinations.

The significant accounting policies are unchanged from those disclosed in the Company's 2019 Annual Report.

CHANGE IN / INITIAL ADOPTION OF ACCOUNTING POLICIES

Recently adopted accounting pronouncements

In February 2016, the FASB issued Accounting Standards Update 2016-02, "Leases (Topic 842)" ("ASU 2016-02") and issued subsequent amendments to the initial guidance during 2018, collectively referred to as "ASC 842". These updates supersede the lease guidance in ASC Topic 840, "Leases" and require the recognition of lease assets and lease liabilities by lessees for most leases previously classified as operating leases under ASC Topic 840. Leases will continue to be classified as either operating or finance. ASC 842 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2018, which is our fiscal year that began on February 1, 2019 (fiscal 2020). The Company has adopted ASC 842 in the first quarter of fiscal 2020 using the cumulative effect method and therefore the comparative information has not been restated and continues to be reported under ASC 840.

As permitted under ASC 842, we have elected to apply the practical expedient to carry forward our current assessments of whether a contract contains a lease, lease classification, remaining lease terms and amounts capitalized as initial direct costs. We have also elected to apply the practical expedient not to recognize right-of-use (ROU) assets and lease liabilities for short-term leases that have a lease term of 12 months or less.

The adoption of ASC 842 resulted in an increase to ROU assets and lease liabilities of \$10.4 million as of February 1, 2019. The adoption of ASC 842 did not have a material impact on either our consolidated statement of operations or our consolidated statement of cash flows.

Recently issued accounting pronouncements

In June 2016, the FASB issued Accounting Standards Update 2016-13, "Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments" ("ASU 2016-13") and issued subsequent amendments to the initial guidance during 2020, collectively referred to as "ASC 326". ASC 326 requires measurement and recognition of expected credit losses for financial assets held. ASC 326 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2019, which will be our fiscal year beginning February 1, 2020 (fiscal 2021). Early adoption is permitted. The Company will adopt this guidance in the first quarter of fiscal 2021 and is currently evaluating the impact that the adoption will have on its results of operations, financial position and disclosures.

In January 2017, the FASB issued Accounting Standards Update 2017-04, "Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment" ("ASU 2017-04"). ASU 2017-04 simplifies how an entity is required to test goodwill for impairment. ASU 2017-04 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2019, which will be our fiscal year beginning February 1, 2020 (fiscal 2021). Early adoption is permitted. The Company will adopt this guidance in the first quarter of fiscal 2021. The adoption of this amendment is not expected to have a material impact on our results of operations or disclosures.

In August 2018, the FASB issued Accounting Standards Update 2018-15, "Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract" ("ASU 2018-15"). ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. ASU 2018-15 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2019, which will be our fiscal year beginning February 1, 2020 (fiscal 2021). Early adoption is permitted. The Company will adopt this guidance in the first quarter

of fiscal 2021. The adoption of this amendment is not expected to have a material impact on our results of operations or disclosures.

CONTROLS AND PROCEDURES

During the period beginning on February 1, 2019 and ended on April 30, 2019, no changes were made to the Company's internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

TRENDS / BUSINESS OUTLOOK

This section discusses our outlook for fiscal 2020 and in general as of the date of this MD&A and contains forward-looking statements.

Our business may be impacted from time to time by the general cyclical and seasonal nature of particular modes of transportation and the freight market in general, as well as the cyclical and seasonal nature of the industries that such markets serve. Factors which may create cyclical fluctuations in such modes of transportation or the freight market in general include legal and regulatory requirements, timing of contract renewals between our customers and their own customers, seasonal-based tariffs, vacation periods applicable to particular shipping or receiving nations, weather-related events that impact shipping in particular geographies and amendments to international trade agreements. Since some of our revenues from particular products and services are tied to the volume of shipments being processed, adverse fluctuations in the volume of global shipments or shipments in any particular mode of transportation may adversely affect our revenues. Significant declines in shipment volumes could likely have a material adverse effect on our business.

Industry consolidation, rapid technological change and frequent new product introductions and enhancements continue to characterize the software and services industries – particularly for logistics management technology companies. Organizations are increasingly requiring greater levels of functionality and more sophisticated product offerings from their software and services providers.

Increased importance is being placed on leveraging cloud-based technology to better manage logistics processes and to connect and collaborate with trading partners on a global basis, as well as to reuse and share supply chain data in order to accelerate time-to-value. Cloud-based technology also enables business networks to more easily unite and integrate services provided by a broad range of partners and technology alliances to extend functionality and further enhance collaboration between business communities. As a result, we believe there is a trend away from using manual and paper-based supply chain and logistics processes towards electronic processes powered by the exchange of electronic information between logistics and supply chain participants.

Accordingly, we expect that our future success will be dependent upon our ability to enhance current products or develop and introduce new products offering enhanced performance and new functionality at competitive prices. In particular, we believe customers are looking for end-to-end solutions that combine a multi-modal, multi-process network with business document exchange and wireless mobile resource management ("MRM") applications with end-to-end global trade compliance, trade content and collaborative supply chain execution applications. These applications include freight bookings, contract and rate management, classification of goods for tariff and duty purposes, sanctioned party screening, customs filings and electronic shipment manifest processes, transportation management, routing and scheduling, purchase order to dock door processes, and inventory visibility.

We believe there is a continued acceptance of subscription pricing and SaaS business models in the markets we serve that provide lower up-front cost and easier-to-maintain alternatives than may be available through traditional perpetual license pricing models. In the first quarter of fiscal 2020, our services revenues comprised 86% of our total revenues, with the balance being license, professional services and other revenues. We expect that our focus in fiscal 2020 will remain on generating services revenues, primarily by promoting the use of our GLN (including customs compliance services) and the migration of customers using our legacy license-based products to our services-based architecture. We anticipate maintaining the flexibility to license our products to those customers who prefer to buy the products in that fashion and the composition of our revenues in any one quarter will be impacted by the buying preferences of our customers.

We have significant contracts with our license customers for ongoing support and maintenance, as well as significant service contracts which provide us with recurring services revenues. After their initial term, our service contracts are generally renewable at a customer's option, and there are generally no mandatory payment obligations or obligations to license additional software or subscribe for additional services. For fiscal 2020, based on our historic experience, we anticipate that over a one-year period we may lose approximately 4% to 6% of our aggregate annualized recurring revenues in the ordinary course.

We internally measure and manage our "baseline calibration," a non-GAAP financial measure, which we define as the difference between our "baseline revenues" and "baseline operating expenses". We define our "baseline revenues," a non-GAAP financial measure, as our visible, recurring and contracted revenues. Baseline revenues are not a projection of anticipated total revenues for a period as they exclude any anticipated or expected new sales for a period beyond the date that the baseline revenues are measured. We define our "baseline operating expenses," a non-GAAP financial measure, as our total expenses less interest, investment income, taxes, depreciation and amortization, stock-based compensation (for which we include related costs and taxes), acquisition-related costs and restructuring charges. Baseline operating expenses are not a projection of anticipated total expenses for a period as they exclude any expenses associated with anticipated or expected new sales for a period beyond the date that the baseline expenses are measured. Our baseline calibration is not a projection of net income for a period as determined in accordance with GAAP, or adjusted earnings before interest, taxes, depreciation and amortization for a period as it excludes anticipated or expected new sales for a period beyond the date that the baseline calibration is measured, excludes any costs of goods sold or other expenses associated with such new sales, and excludes the expenses identified as excluded in the definition of "baseline operating expenses," above. We calculate and disclose "baseline revenues," "baseline operating expenses" and "baseline calibration" because management uses these metrics in determining its planned levels of expenditures for a period and we believe this information is useful to our investors. However, because these metrics are limited estimated operating metrics that do not have comparable GAAP measures, we are unable to provide quantitative reconciliations of these measures to GAAP measures without unreasonable efforts and accordingly are omitting this information. These metrics are estimated operating metrics and not projections, nor actual financial results, and are not indicative of current or future performance. These metrics do not have a standardized meaning prescribed by GAAP and are unlikely to be comparable to similarly-titled metrics used by other companies and are not a replacement or proxy for any GAAP measure. At May 10, 2019, using foreign exchange rates of \$0.74 to CAD \$1.00, \$1.12 to EUR 1.00 and \$1.30 to £1.00, we estimated that our baseline revenues for the second quarter of 2020 are approximately \$76.0 million and our baseline operating expenses are approximately \$52.2 million. We consider this to be our baseline calibration of approximately \$23.8 million for the second quarter of 2020, or approximately 31% of our baseline revenues as at May 10, 2019. Visual Compliance made a positive contribution to our income from operations and a percentage of our revenues in the first quarter of fiscal 2020 and we believe that positive impact will continue for the balance of fiscal 2020.

We estimate that aggregate amortization expense for existing intangible assets will be \$51.6 million for the remainder of 2020, \$48.5 million for 2021, \$44.2 million for 2022, \$36.7 million for 2023, \$25.1 million for 2024, \$22.1 million for 2025, and \$38.5 million thereafter. Expected future amortization expense is based on the level of existing intangibles at April 30, 2019, and is subject to fluctuations in foreign exchange rates and assumes no future adjustments or impairment of existing intangible assets.

We anticipate that stock-based compensation expense for the remainder of fiscal 2020 for grants outstanding as at April 30, 2019 will be approximately \$3.8 to \$4.0 million, subject to any necessary adjustments resulting from actual stock-based compensation forfeitures and fluctuations in foreign exchange rates.

We performed our annual goodwill impairment tests in accordance with ASC Topic 350, "Intangibles – Goodwill and Other" ("ASC Topic 350") as at October 31, 2018 and determined that there was no evidence of impairment. We are currently scheduled to perform our next annual impairment test during the third quarter of fiscal 2020. We will continue to perform quarterly analyses of whether any event has occurred that would more likely than not reduce our enterprise value below our carrying amounts and, if so, we will perform a goodwill impairment test between the annual dates. The likelihood of any future impairment increases if our public market capitalization is adversely impacted by global economic, capital market or other conditions for a sustained period of time. Any future impairment adjustment will be recognized as an expense in the period that such adjustment is identified.

In the first quarter of 2020, capital expenditures were \$1.4 million or approximately 2% of revenues, as we continue to invest in computer equipment and software to support our network and build out our infrastructure. We anticipate that we will incur approximately \$4.5 million to \$6.5 million in capital expenditures in the remainder of fiscal 2020 primarily related to investments in our network and security infrastructure.

We conduct business in a variety of foreign currencies and, as a result, our foreign operations are subject to foreign exchange fluctuations. Our businesses operate in their local currency environment and use their local currency as their functional currency. Assets and liabilities of foreign operations are translated into US dollars at the exchange rate in effect at the balance sheet date. Revenues and expenses of foreign operations are translated using daily exchange rates. Translation adjustments resulting from this process are accumulated in other comprehensive income (loss) as a separate component of shareholders' equity. Transactions incurred in currencies other than the functional currency are converted to the functional currency at the transaction date. All foreign currency transaction gains and losses are included in net income. Some of our cash is held in foreign currencies. We currently have no specific hedging program in place to address fluctuations in international currency exchange rates. We can make no accurate prediction of what will happen with international currency exchange rates going forward. However, if the US dollar was to weaken in comparison to foreign currencies, then we anticipate this will increase the expenses of our business and have a negative impact on our results of operations. By way of illustration, 71% of our revenues in the first quarter of fiscal 2020 were in US dollars, 13% in euro, 8% in Canadian dollars, 3% in British pound sterling, and the balance in mixed currencies, while 46% of our operating expenses were in US dollars, 16% in euro, 25% in Canadian dollars, 4% in British pound sterling, and the balance in mixed currencies.

Our tax expense for a period is difficult to predict as it depends on many factors, including the actual jurisdictions in which income is earned, the tax rates in those jurisdictions, the amount of deferred tax assets relating to the jurisdictions and the valuation allowances relating to those tax assets. We can provide no assurance as to the timing or amounts of any income tax expense or recovery, nor can we provide any assurance that our current valuation allowance for deferred tax assets will not need to be adjusted further.

We anticipate that our effective tax rate will be approximately 24% to 27% in the remainder of fiscal 2020.

We intend to continue to actively explore business combinations to add complementary services, products and customers to our existing businesses. We also intend to continue to focus our acquisition activities on companies that are targeting the same customers as us and processing similar data and, to that end, we listen to our customers' suggestions as they relate to acquisition opportunities. Depending on the size and scope of any business combination, or series of business combinations, we may choose or need to use our existing credit facility or need to raise additional debt or equity capital. However, there can be no assurance

that we will be able to undertake such a financing transaction. If we use debt in connection with acquisition activity, we will incur additional interest expense from the date of the draw under such facility.

Certain future commitments are set out above in the section of this MD&A called "Commitments, Contingencies and Guarantees". We believe that we have sufficient liquidity to fund our current operating and working capital requirements, including the payment of these commitments.

CERTAIN FACTORS THAT MAY AFFECT FUTURE RESULTS

Any investment in us will be subject to risks inherent to our business. Before making an investment decision, you should carefully consider the risks described below together with all other information included in this report. The risks and uncertainties described below are not the only ones facing us. Additional risks and uncertainties that we are not aware of or have not focused on, or that we currently deem immaterial, may also impair our business operations. This report is qualified in its entirety by these risk factors.

If any of the risks actually occur, they could materially adversely affect our business, financial condition, liquidity or results of operations. In that case, the trading price of our securities could decline and you may lose all or part of your investment.

We may have difficulties identifying, successfully integrating or maintaining or growing our acquired businesses.

Businesses that we acquire may sell products or services that we have limited experience operating or managing. We may experience unanticipated challenges or difficulties identifying suitable acquisition candidates, integrating their businesses into our company, maintaining these businesses at their current levels or growing these businesses. Factors that may impair our ability to identify, successfully integrate, maintain or grow acquired businesses may include, but are not limited to:

- Challenges identifying suitable businesses to buy and negotiating the acquisition of those businesses on acceptable terms;
- Challenges completing the acquisitions within our expected time frames and budgets;
- Challenges in integrating acquired businesses with our business;
- Loss of customers of the acquired business;
- Loss of key personnel from the acquired business, such as former executive officers or key technical personnel;
- Non-compatible business cultures;
- For regulatory compliance businesses, changes in government regulations impacting electronic regulatory filings or import/export compliance, including changes in which government agencies are responsible for gathering import and export information;
- Difficulties in gaining necessary approvals in international markets to expand acquired businesses as contemplated;
- Our inability to obtain or maintain necessary security clearances to provide international shipment management services;
- Our failure to make appropriate capital investments in infrastructure to facilitate growth; and
- Other risk factors identified in this report.

We may fail to properly respond to any of these risks, which may have a material adverse effect on our business results.

Investments in acquisitions and other business initiatives involve a number of risks that could harm our business.

We have in the past acquired, and in the future, expect to seek to acquire, additional products, services, customers, technologies and businesses that we believe are complementary to ours. For example, in fiscal 2020 we acquired Visual Compliance. In fiscal 2019, we acquired Aljex, Velocity Mail and PinPoint. In fiscal

2018, we acquired ShipRush, PCSTrac and MacroPoint. We're unable to predict whether or when we will be able to identify any appropriate products, technologies or businesses for acquisition, or the likelihood that any potential acquisition will be available on terms acceptable to us or will be completed. We also, from time to time, take on investments in other business initiatives, such as the implementation of new systems.

Acquisitions and other business initiatives involve a number of risks, including: substantial investment of funds, diversion of management's attention from current operations; additional demands on resources, systems, procedures and controls; and disruption of our ongoing business. Acquisitions specifically involve risks, including: difficulties in integrating and retaining all or part of the acquired business, its customers and its personnel; assumption of disclosed and undisclosed liabilities; dealing with unfamiliar laws, customs and practices in foreign jurisdictions; and the effectiveness of the acquired company's internal controls and procedures. In addition, we may not identify all risks or fully assess risks identified in connection with an investment. As well, by investing in such initiatives, we may deplete our cash resources or dilute our shareholder base by issuing additional shares. Furthermore, for acquisitions, there is a risk that our valuation assumptions, customer retention expectations and our models for an acquired product or business may be erroneous or inappropriate due to foreseen or unforeseen circumstances and thereby cause us to overvalue an acquisition target. There is also a risk that the contemplated benefits of an acquisition or other investment may not materialize as planned or may not materialize within the time period or to the extent anticipated. The individual or combined effect of these risks could have a material adverse effect on our business.

System or network failures, information security breaches or other cyber-security threats in connection with our services and products could reduce our sales, impair our reputation, increase costs or result in liability claims, and seriously harm our business.

We rely on information technology networks and systems to process, transmit and store electronic information. Any disruption to our services and products, our own information systems or communications networks or those of third-party providers on which we rely as part of our own product offerings could result in the inability of our customers to receive our products for an indeterminate period of time. Our ability to deliver our products and services depends on the development and maintenance of internet infrastructure by third parties. This includes maintenance of reliable networks with the necessary security, speed, data capacity and bandwidth. While our services are designed to operate without interruption, we have experienced, and may in the future experience, interruptions and delays in services and availability from time to time. In the event of a catastrophic event with respect to one or more of our systems, we may experience an extended period of system unavailability, which could negatively impact our relationship with customers. Our services and products may not function properly for reasons which may include, but are not limited to, the following:

- System or network failure;
- Software errors, failures and crashes;
- Interruption in the supply of power;
- Virus proliferation or malware;
- Communications failures;
- Information or infrastructure security breaches;
- Insufficient investment in infrastructure;
- Earthquakes, fires, floods, natural disasters, or other force majeure events outside our control; and
- Acts of war, sabotage, cyber-attacks, denial-of-service attacks and/or terrorism.

In addition, any disruption to the availability of customer information, or any compromise to the integrity or confidentiality of customer information in our systems or networks, or the systems or networks of third parties on which we rely, could result in our customers being unable to effectively use our products or services or being forced to take mitigating actions to protect their information. Back-up and redundant systems may be insufficient or may fail and result in a disruption of availability of our products or services to our customers or the integrity or availability of our customers' information.

Some jurisdictions have enacted laws requiring companies to notify individuals of data security breaches

involving certain types of personal data and in some cases our agreements with certain customers require us to notify them in the event of a security incident. Such mandatory disclosures could lead to negative publicity and may cause our current and prospective customers to lose confidence in the effectiveness of our data security measures. Moreover, if a high-profile security breach occurs with respect to another SaaS provider, customers may lose trust in the security of the SaaS business model generally, which could adversely impact our ability to retain existing customers or attract new ones.

Any actual or perceived threat of disruption to our services or any compromise of customer information could impair our reputation and cause us to lose customers or revenue, or face litigation, necessitate customer service or repair work that would involve substantial costs and distract management from operating our business. Despite the implementation of advanced threat protection, information and network security measures and disaster recovery plans, our systems and those of third parties on which we rely may be vulnerable. If we are unable (or are perceived as being unable) to prevent, or promptly identify and remedy, such outages and breaches, our operations may be disrupted, our business reputation could be adversely affected, and there could be a negative impact on our financial condition and results of operations.

Our existing customers might cancel contracts with us, fail to renew contracts on their renewal dates, and/or fail to purchase additional services and products, and we may be unable to attract new customers.

We depend on our installed customer base for a significant portion of our revenues. We have significant contracts with our license customers for ongoing support and maintenance, as well as significant service contracts that provide recurring services revenues to us. In addition, our installed customer base has historically generated additional new license and services revenues for us. Service contracts are generally renewable at a customer's option and/or subject to cancellation rights, and there are generally no mandatory payment obligations or obligations to license additional software or subscribe for additional services.

If our customers fail to renew their service contracts, fail to purchase additional services or products, or we are unable to attract new customers, then our revenues could decrease and our operating results could be adversely affected. Factors influencing such contract terminations could include changes in the financial circumstances of our customers, dissatisfaction with our products or services, our retirement or lack of support for our legacy products and services, our customers selecting or building alternate technologies to replace us, the cost of our products and services as compared to the cost of products and services offered by our competitors, our ability to attract, hire and maintain qualified personnel to meet customer needs, consolidating activities in the market, and changes in our customers' business or in regulation impacting our customers' business that may no longer necessitate the use of our products or services, general economic or market conditions, or other reasons. Further, our customers could delay or terminate implementations or use of our services and products or be reluctant to migrate to new products. Such customers will not generate the revenues we may have anticipated within the timelines anticipated, if at all, and may be less likely to invest in additional services or products from us in the future. We may not be able to adjust our expense levels quickly enough to account for any such revenue losses. In addition, loss of one or more of our key customers could adversely impact our competitive position in the marketplace and hurt our credibility and ability to attract new customers.

Our success depends on our ability to continue to innovate and to create new solutions and enhancements to our existing products

We may not be able to develop and introduce new solutions and enhancements to our existing products that respond to new technologies or shipment regulations on a timely basis. If we are unable to develop and sell new products and new features for our existing products that keep pace with rapid technological and regulatory change as well as developments in the transportation logistics industry, our business, results of operations and financial condition could be adversely affected. We intend to continue to invest significant resources in research and development to enhance our existing products and services and introduce new high-quality products that customers will want. If we are unable to predict or quickly react to user preferences or changes in the transportation logistics industry, or its regulatory requirements, or

if we are unable to modify our products and services on a timely basis or to effectively bring new products to market, our sales may suffer.

In addition, we may experience difficulties with software or hardware development, design, integration with third-party software or hardware, or marketing that could delay or prevent our introduction, deployment or implementation of new solutions and enhancements. The introduction of new solutions by competitors, the emergence of new industry standards or the development of entirely new technologies to replace existing offerings could render our existing or future solutions obsolete.

We may not have sufficient resources to make the necessary investments in software development and our technical infrastructure, and we may experience difficulties that could delay or prevent the successful development, introduction or marketing of new products or enhancements. In addition, our products or enhancements may not meet increasingly complex customer requirements or achieve market acceptance at the rate we expect, or at all. Any failure by us to anticipate or respond adequately to technological advancements, customer requirements and changing industry standards, or any significant delays in the development, introduction or availability of new products or enhancements, could undermine our current market position and negatively impact our business, results of operations or financial condition.

Disruptions in the movement of freight could negatively affect our revenues.

Our business is highly dependent on the movement of freight from one point to another since we generate transaction revenues as freight is moved by, to or from our customers. If there are disruptions in the movement of freight, proper reporting or the overall volume of international shipments, whether as a result of labor disputes, weather or natural disaster, terrorist events, political instability, changes in cross border trade agreements, contagious illness outbreaks, or otherwise, then the traffic volume on our Global Logistics Network will be impacted and our revenues will be adversely affected. As these types of freight disruptions are generally unpredictable, there can be no assurance that our business, results of operations and financial condition will not be adversely affected by such events.

We may not remain competitive. Increased competition could seriously harm our business.

The market for supply chain technology is highly competitive and subject to rapid technological change. We expect that competition will increase in the future. To maintain and improve our competitive position, we must continue to develop and introduce in a timely and cost-effective manner new products, product features and services to keep pace with our competitors. We currently face competition from a large number of specific market entrants, some of which are focused on specific industries, geographic regions or other components of markets we operate in.

Current and potential competitors include supply chain application software vendors, customers that undertake internal software development efforts, value-added networks and business document exchanges, enterprise resource planning software vendors, regulatory filing companies, trade data vendors and general business application software vendors. Many of our current and potential competitors may have one or more of the following relative advantages:

- Established relationships with existing customers or prospects that we are targeting;
- Superior product functionality and industry-specific expertise;
- Broader range of products to offer and better product life cycle management;
- Larger installed base of customers;
- Greater financial, technical, marketing, sales, distribution and other resources;
- Better performance;
- Lower cost structure and more profitable operations;
- Greater investment in infrastructure;
- Greater worldwide presence;
- Early adoption of, or adaptation to changes in, technology; or
- Longer operating history; and/or greater name recognition.

Further, current and potential competitors have established, or may establish, cooperative relationships and business combinations among themselves or with third parties to enhance their products, which may result in increased competition. In addition, we expect to experience increasing price competition and

competition surrounding other commercial terms as we compete for market share. In particular, larger competitors or competitors with a broader range of services and products may bundle their products, rendering our products more expensive and/or less functional. As a result of these and other factors, we may be unable to compete successfully with our existing or new competitors.

If we fail to attract and retain key personnel, it would adversely affect our ability to develop and effectively manage our business.

Our performance is substantially dependent on the performance of our highly qualified management, technical expertise, and sales and marketing personnel, which we regard as key individuals to our business. We do not maintain life insurance policies on any of our employees that list Descartes as a loss payee. Our success is highly dependent on our ability to identify, hire, train, motivate, promote, and retain key individuals. Significant competition exists for management and skilled personnel. If we fail to cross train key employees, particularly those with specialized knowledge it could impair our ability to provide consistent and uninterrupted service to our customers. If we are not able to attract, retain or establish an effective succession planning program for key individuals it could have a material adverse effect on our business, results of operations, financial condition and the price of our common shares.

We have in the past, and may in the future, make changes to our executive management team or board of directors. There can be no assurance that any such changes and the resulting transition will not have a material adverse effect on our business, results of operations, financial condition and the price of our common shares.

General economic conditions may affect our results of operations and financial condition.

Demand for our products depends in large part upon the level of capital and operating expenditures by many of our customers. Decreased capital and operational spending could have a material adverse effect on the demand for our products and our business, results of operations, cash flow and overall financial condition. Disruptions in the financial markets may adversely impact the availability of credit already arranged and the availability and cost of credit in the future, which could result in the delay or cancellation of projects or capital programs on which our business depends. In addition, disruptions in the financial markets may also have an adverse impact on regional economies or the world economy, which could negatively impact the capital and operating expenditures of our customers. These conditions may reduce the willingness or ability of our customers and prospective customers to commit funds to purchase our products and services, or their ability to pay for our products and services after purchase.

Changes in government filing or screening requirements for global trade may adversely impact our business.

Our regulatory compliance services help our customers comply with government filing and screening requirements relating to global trade. The services that we offer may be impacted, from time to time, by changes in these requirements, including potential future changes as a consequence of Brexit or the ratification of the Canada-United States-Mexico Agreement. Changes in requirements that impact electronic regulatory filings or import/export compliance, including changes adding or reducing filing requirements, changes in enforcement practices or changes in the government agency responsible for such requirements could adversely impact our business, results of operations and financial condition.

Emergence or increased adoption of alternative sources for trade data may adversely impact our business.

With recent acquisitions in the area of supplying trade data and content, an increasing portion of our business relates to the supply of trade data and content that is often used by our customers in other systems, such as enterprise resource planning systems. Emergence or increased adoption of alternative sources of this data and content could have an adverse impact on our customers' needs to obtain this data and content from us and/or the need for certain of the third-party system vendors in this field to

refer customers to us for this data and content, each of which could adversely impact upon the revenues and income we generate from these areas of our business.

If we need additional capital in the future and are unable to obtain it or can only obtain it on unfavorable terms, our operations may be adversely affected, and the market price for our securities could decline.

Historically, we have financed our operations primarily through cash flows from our operations, the sale of our equity securities and borrowing under our credit facility. In addition to our current cash and available debt facilities, we may need to raise additional debt or equity capital to repay existing debt, fund expansion of our operations, to enhance our services and products, or to acquire or invest in complementary products, services, businesses or technologies. However, there can be no assurance that we will be able to undertake incremental financing transactions. If we raise additional funds through further issuances of convertible debt or equity securities, our existing shareholders could suffer significant dilution and any new equity securities we issue could have rights, preferences and privileges superior to those attaching to our common shares. Our current credit facility contains, and any debt financing secured by us in the future could contain restrictive covenants relating to our capital-raising activities and other financial and operational matters, which may make it more difficult for us to obtain additional capital and to pursue business opportunities, including potential acquisitions. In addition, we may not be able to obtain additional financing on terms favorable to us, if at all. If adequate funds are not available on terms favorable or at all, our operations and growth strategy may be adversely affected and the market price for our common shares could decline.

Changes in the value of the U.S. dollar, as compared to the currencies of other countries where we transact business, could harm our operating results and financial condition.

Historically, the largest percentage of our revenues has been denominated in U.S. dollars. However, the majority of our international expenses, including the wages of our non-U.S. employees and certain key supply agreements, have been denominated in Canadian dollars, euros and other foreign currencies. Therefore, changes in the value of the U.S. dollar as compared to the Canadian dollar, the euro and other foreign currencies may materially affect our operating results. We generally have not implemented hedging programs to mitigate our exposure to currency fluctuations affecting international accounts receivable, cash balances and inter-company accounts. We also have not hedged our exposure to currency fluctuations affecting future international revenues and expenses and other commitments. Accordingly, currency exchange rate fluctuations have caused, and may continue to cause, variability in our foreign currency denominated revenue streams, expenses, and our cost to settle foreign currency denominated liabilities.

We may have exposure to greater than anticipated tax liabilities or expenses.

We are subject to income and non-income taxes in various jurisdictions and our tax structure is subject to review by both domestic and foreign taxation authorities and currently has tax audits open in a number of jurisdictions in which we operate. On a quarterly basis, we assess the status of these audits and the potential for adverse outcomes to determine whether a provision for income and other taxes is appropriate. The timing of the resolution of income tax audits is highly uncertain, and the amounts ultimately paid, if any, upon resolution of the issues raised by the taxing authorities may differ from any amounts that we accrue from time to time. The actual amount of any change could vary significantly depending on the ultimate timing and nature of any settlements. We cannot currently provide an estimate of the range of possible outcomes.

The determination of our worldwide provision for income taxes and other tax liabilities requires significant judgment. In the ordinary course of a global business, there are many transactions and calculations where the ultimate tax outcome is uncertain. Any audit of our tax filings could materially change the amount of current and deferred income tax assets and liabilities. We have recorded a valuation allowance against a portion of our net deferred tax assets. If we achieve a consistent level of profitability, the likelihood of further reducing our deferred tax valuation allowance for some portion of the losses incurred in prior periods in one of our jurisdictions will increase. We calculate our current and deferred tax provision based on estimates and assumptions that could differ from the actual results reflected in income tax returns filed during subsequent years. Adjustments based on filed returns are generally recorded in the period when

the tax returns are filed and the global tax implications are known. Our estimate of the potential outcome for any uncertain tax issue is based on a number of assumptions. Any further changes to the valuation allowance for our deferred tax assets would also result in an income tax recovery or income tax expense, as applicable, on the consolidated statements of operations in the period in which the valuation allowance is changed.

Changes to earnings resulting from past acquisitions may adversely affect our operating results.

Under ASC Topic 805, "Business Combinations", we allocate the total purchase price to an acquired company's net tangible assets, intangible assets and in-process research and development based on their values as of the date of the acquisition (including certain assets and liabilities that are recorded at fair value) and record the excess of the purchase price over those values as goodwill. Management's estimates of fair value are based upon assumptions believed to be reasonable but which are inherently uncertain. After we complete an acquisition, the following factors, among others, could result in material charges that would adversely affect our operating results and may adversely affect our cash flows:

- Impairment of goodwill or intangible assets;
- A reduction in the useful lives of intangible assets acquired;
- Identification of assumed contingent liabilities after we finalize the purchase price allocation period;
- Charges to our operating results to eliminate certain pre-merger activities that duplicate those of the acquired company or to reduce our cost structure; and
- Charges to our operating results resulting from revised estimates to restructure an acquired company's operations after we finalize the purchase price allocation period.

Routine charges to our operating results associated with acquisitions include amortization of intangible assets, acquisition-related costs and restructuring charges. Acquisition-related costs primarily include retention bonuses, advisory services, brokerage services and administrative costs with respect to completed and prospective acquisitions.

We expect to continue to incur additional costs associated with combining the operations of our acquired companies, which may be substantial. Additional costs may include costs of employee redeployment, relocation and retention, including salary increases or bonuses, accelerated stock-based compensation expenses and severance payments, reorganization or closure of facilities, taxes, and termination of contracts that provide redundant or conflicting services. These costs would be accounted for as expenses and would decrease our net income and earnings per share for the periods in which those adjustments are made.

As we continue to increase our international operations we increase our exposure to international business risks that could cause our operating results to suffer.

While our headquarters are in Canada, we currently have direct operations in the U.S., EMEA, Asia Pacific and South American regions. We anticipate that these international operations will continue to require significant management attention and financial resources to localize our services and products for delivery in these markets, to develop compliance expertise relating to international regulatory agencies, and to develop direct and indirect sales and support channels in those markets. We face a number of risks associated with conducting our business internationally that could negatively impact our operating results. These risks include, but are not limited to:

- Longer collection time from foreign clients, particularly in the EMEA region and the Asia Pacific region;
- Difficulty in repatriating cash from certain foreign jurisdictions;
- Language barriers, conflicting international business practices, and other difficulties related to the management and administration of a global business;
- Increased management, travel, infrastructure and legal compliance costs associated with having international operations;
- Difficulties and costs of staffing and managing geographically disparate direct and indirect operations;
- Volatility or fluctuations in foreign currency and tariff rates;

- Multiple, and possibly overlapping, tax structures;
- Complying with complicated and widely differing global laws and regulations in areas such as employment, tax, privacy and data protection;
- Trade restrictions;
- Enhanced security procedures and requirements relating to certain jurisdictions;
- The need to consider characteristics unique to technology systems used internationally;
- Economic or political instability in some markets; and
- Other risk factors set out herein.

Increases in fuel prices and other transportation costs may have an adverse effect on the businesses of our customers resulting in them spending less money with us.

Our customers are all involved, directly or indirectly, in the delivery of goods from one point to another, particularly transportation providers and freight forwarders. As the costs of these deliveries become more expensive, whether as a result of increases in fuel costs or otherwise, our customers may have fewer funds available to spend on our products and services. There can be no assurance that these companies will be able to allocate sufficient funds to use our products and services. In addition, rising fuel costs may cause global or geographic-specific reductions in the number of shipments being made, thereby impacting the number of transactions being processed by our Global Logistics Network and our corresponding network revenues.

We may not be able to compensate for downward pricing pressure on certain products and services by increased volumes of transactions or increased prices elsewhere in our business, ultimately resulting in lower revenues.

Some of our products and services are sold to industries where there is downward pricing pressure on the particular product or service due to competition, general industry conditions or other causes. If we cannot offset any such downward pricing pressure, then the particular customer may generate less revenue for our business or we may have less aggregate revenue. This could have an adverse impact on our operating results.

From time to time, we may be subject to litigation or dispute resolution that could result in significant costs to us and damage to our reputation.

From time to time, we may be subject to litigation or dispute resolution relating to any number or type of claims, including claims for damages related to undetected errors or malfunctions of our services and products or their deployment, claims related to previously-completed acquisition transactions or claims relating to applicable securities laws. Litigation may seriously harm our business because of the costs of defending the lawsuit, diversion of employees' time and attention and potential damage to our reputation.

Further, our services and products are complex and often implemented by our customers to interact with third-party technology or networks. Claims may be made against us for damages properly attributable to those third-party technologies or networks, regardless of our lack of responsibility for any failure resulting in a loss, even if our services and products perform in accordance with their functional specifications. We may also have disputes with key suppliers for damages incurred which, depending on resolution of the disputes, could impact the ongoing quality, price or availability of the services or products we procure from the supplier. Limitation of liability provisions in certain third-party contracts may not be enforceable under the laws of some jurisdictions. As a result, we could be required to pay substantial amounts of damages in settlement or upon the determination of any of these types of claims, and incur damage to our reputation and products. The likelihood of such claims and the amount of damages we may be required to pay may increase as our customers increasingly use our services and products for critical business functions, or rely on our services and products as the systems of record to store data for use by other customer applications. Our insurance may not cover potential claims, or may not be adequate to cover all costs incurred in defense of potential claims or to indemnify us for all liability that may be imposed. A claim brought against us that is uninsured or underinsured could result in unanticipated costs, thereby harming our operating results and leading analysts or potential investors to lower their expectations of our performance, which could reduce the trading price of our common shares.

Our success and ability to compete depend upon our ability to secure and protect patents, trademarks and other proprietary rights.

We consider certain aspects of our internal operations, products, services and related documentation to be proprietary, and we primarily rely on a combination of patent, copyright, trademark and trade secret laws and other measures to protect our proprietary rights. Patent applications or issued patents, as well as trademark, copyright, and trade secret rights may not provide adequate protection or competitive advantage and may require significant resources to obtain and defend. We will also not be able to protect our intellectual property if we are unable to enforce our rights or if we do not detect unauthorized use of our intellectual property. Despite our precautions, it may be possible for unauthorized third parties to copy our products and use information that we regard as proprietary to create products and services that compete with ours. We also rely on contractual restrictions in our agreements with customers, employees, outsourced developers and others to protect our intellectual property rights. There can be no assurance that these agreements will not be breached, that we will have adequate remedies for any breach, or that our patents, copyrights, trademarks or trade secrets will not otherwise become known. Through an escrow arrangement, we have granted some of our customers a contingent future right to use our source code for software products solely for their internal maintenance services. If our source code is accessed through an escrow, the likelihood of misappropriation or other misuse of our intellectual property may increase.

Moreover, the laws of some countries do not protect proprietary intellectual property rights as effectively as do the laws of the U.S. and Canada. Protecting and defending our intellectual property rights could be costly regardless of venue. In order to protect our intellectual property rights, we may be required to spend significant resources to monitor and protect these rights. The Company is currently involved in, and expects to remain involved in, certain litigation to protect its intellectual property from infringement by third parties. In addition, further litigation may be necessary in the future to enforce our intellectual property rights, to protect our trade secrets, to determine the validity and scope of the intellectual property rights of others or to defend against claims of infringement or invalidity. Litigation brought to protect and enforce our intellectual property rights could be costly, time consuming and distracting to management and could result in the impairment or loss of portions of our intellectual property. Furthermore, our efforts to enforce our intellectual property rights may be met with defenses, counterclaims and countersuits attacking the validity and enforceability of our intellectual property rights and/or exposing us to claims for damages in any related counterclaims or countersuits. Our inability to protect our proprietary technology against unauthorized copying or use, as well as any costly litigation or diversion of our management's attention and resources, could delay further sales or the implementation of our solutions, impair the functionality of our solutions, delay introductions of new solutions, result in our substituting inferior or more costly technologies into our solutions, or injure our reputation.

We are dependent on certain key vendors for the availability of hardware devices, which could impede our development and expansion.

We currently have relationships with a small number of hardware device vendors over which we have no operational or financial control and no influence in how these vendors conduct their businesses. Suppliers of hardware devices could among other things, extend delivery times, raise prices and limit supply due to their own shortages and business requirements. Interruption in the supply of equipment from these vendors could delay our ability to maintain, grow and expand our telematics solutions business and those areas of our business that interact with telematics units. If our relationships with any of these unit vendors were to terminate, there is no guarantee that our remaining unit vendors would be able to handle the increased equipment supply required to maintain and grow our expansive networks at our desired rates. There is also no guarantee that business relationships with other key unit vendors could be entered into on terms desirable or favorable to us, if at all. Fewer key vendors might mean that existing or potential customers are unable to meaningfully communicate using our Global Logistics Network, which may cause existing and potential customers to move to competitors' products. Such equipment supply issues could adversely affect our business, results of operations and financial condition.

Concerns about the environmental impacts of greenhouse gas emissions and global climate change may result in environmental taxes, charges, regulatory schemes, assessments or penalties, which could restrict or negatively impact our operations or reduce our profitability.

The impacts of human activity on global climate change have attracted considerable public and scientific attention, as well as the attention of the U.S. and other governments. Efforts are being made to reduce greenhouse gas emissions and energy consumption, including those from automobiles and other modes of transportation. The added cost of any environmental regulation, taxes, charges, assessments or penalties levied or imposed on our customers in light of these efforts could result in additional costs for our customers, which could lead them to reduce use of our services. There are also a number of legislative and environmental regulatory initiatives internationally that could restrict or negatively impact our operations or increase our costs. Additionally, environmental regulation, taxes, charges, assessments or penalties could be levied or imposed directly on us. Any enactment of laws or passage of regulations regarding greenhouse gas emissions by Canada, the U.S., or any other jurisdiction we conduct our business in, could adversely affect our operations and financial results.

The general cyclical and seasonal nature of the freight market may have a material adverse effect on our business, results of operations and financial condition.

Our business may be impacted from time to time by the general cyclical and seasonal nature of particular modes of transportation and the freight market in general, as well as the cyclical and seasonal nature of the industries that such markets serve. Factors which may create cyclical fluctuations in such modes of transportation or the freight market in general include legal and regulatory requirements, timing of contract renewals between our customers and their own customers, seasonal-based tariffs, vacation periods applicable to particular shipping or receiving nations, weather-related events that impact shipping in particular geographies and amendments to international trade agreements. Since some of our revenues from particular products and services are tied to the volume of shipments being processed, adverse fluctuations in the volume of global shipments or shipments in any particular mode of transportation may adversely affect our revenues. Declines in shipment volumes would likely have a material adverse effect on our business.

If we are unable to generate broad market acceptance of our services, products and pricing, serious harm could result to our business.

We currently derive substantially all of our revenues from our federated network and global logistics technology solutions and expect to do so in the future. Broad market acceptance of these types of services and products, and their related pricing, is therefore critical to our future success. The demand for, and market acceptance of, our services and products is subject to a high level of uncertainty. Some of our services and products are often considered complex and may involve a new approach to the conduct of business by our customers. The market for our services and products may weaken, competitors may develop superior services and products that perform logistics services on a global scale or within a particular geographic region, or we may fail to develop or maintain acceptable services and products to address new market conditions, governmental regulations or technological changes. Any one of these events could have a material adverse effect on our business, results of operations and financial condition.

Claims that we infringe third-party proprietary rights could trigger indemnification obligations and result in significant expenses or restrictions on our ability to provide our products or services.

Competitors and other third parties have claimed, and in the future, may claim, that our current or future services or products infringe their proprietary rights or assert other claims against us. Many of our competitors have obtained patents covering products and services generally related to our products and services, and they may assert these patents against us. Such claims, whether with or without merit, could be time consuming and expensive to litigate or settle and could divert management attention from focusing on our core business.

As a result of such a dispute, we may have to pay damages, incur substantial legal fees, suspend the sale or deployment of our services and products, develop costly non-infringing technology, if possible, or enter into license agreements, which may not be available on terms acceptable to us, if at all. Any of these

results would increase our expenses and could decrease the functionality of our services and products, which would make our services and products less attractive to our current and/or potential customers. We have agreed in some of our agreements, and may agree in the future, to indemnify other parties for any expenses or liabilities resulting from claimed infringements of the proprietary rights of third parties. If we are required to make payments pursuant to these indemnification agreements, such payments could have a material adverse effect on our business, results of operations and financial condition.

Our results of operations may vary significantly from quarter to quarter and therefore may be difficult to predict or may fail to meet investment community expectations.

Our results of operations may vary from quarter to quarter in the future due to a variety of factors, many of which are outside of our control. Such factors include, but are not limited to:

- Volatility or fluctuations in foreign currency exchange rates;
- Volatility or fluctuations in interest rates;
- Timing of acquisitions and related costs;
- Timing of restructuring activities;
- The introduction of enhanced products and services from competitors;
- Our ability to introduce new products and updates to our existing products on a timely basis;
- The termination of any key customer contracts, whether by the customer or by us;
- Recognition and expensing of deferred tax assets;
- Legal costs incurred in bringing or defending any litigation with customers or third-party providers, and any corresponding judgments or awards;
- Legal and compliance costs incurred to comply with regulatory requirements;
- Fluctuations in the demand for our services and products;
- The impact of stock-based compensation expense;
- Price and functionality competition in our industry;
- Changes in legislation and accounting standards;
- Our ability to satisfy contractual obligations in customer contracts and deliver services and products to the satisfaction of our customers; and
- Other risk factors discussed in this report.

Although our revenues may fluctuate from quarter to quarter, significant portions of our expenses are not variable in the short term, and we may not be able to reduce them quickly to respond to decreases in revenues. If revenues are below expectations, this shortfall is likely to adversely and/or disproportionately affect our operating results. If this occurs, the trading price of our common shares may fall substantially.

Privacy laws and regulations are extensive, open to various interpretations, complex to implement and may reduce demand for our products, and failure to comply may impose significant liabilities.

Our customers can use our products to collect, use, process and store information regarding their transactions with their customers. Federal, state and foreign government bodies and agencies have been increasingly adopting new laws and regulations regarding the collection, use, processing, storage and disclosure of such information obtained from consumers and individuals. In addition to government regulatory activity, privacy advocacy groups and the technology industry and other industries may consider various new, additional or different self-regulatory standards that may place additional burdens directly on our customers and target customers, and indirectly on us. Our products are expected to be capable of use by our customers in compliance with such laws and regulations. The functional and operational requirements and costs of compliance with such laws and regulations may adversely impact our business, and failure to enable our products to comply with such laws and regulations could lead to significant fines and penalties imposed by regulators, as well as claims by our customers or third parties. Additionally, all of these domestic and international legislative and regulatory initiatives could adversely affect our customers' ability or desire to collect, use, process and store shipment logistics information, which could reduce demand for our products.

The price of our common shares has in the past been volatile and may also be volatile in the future.

The trading price of our common shares may be subject to fluctuation in the future. This may make it more difficult for you to resell your common shares when you want at prices that you find attractive. Increases in our common share price may also increase our compensation expense pursuant to our existing director, officer and employee compensation arrangements. We enter into equity derivative contracts including floating-rate equity forwards to partially offset the potential fluctuations of certain share-based compensation expenses. Fluctuations in our common share price may be caused by events unrelated to our operating performance and beyond our control. Factors that may contribute to fluctuations include, but are not limited to:

- Revenue or results of operations in any quarter failing to meet the expectations, published or otherwise, of the investment community;
- Changes in recommendations or financial estimates by industry or investment analysts;
- Changes in management or the composition of our board of directors;
- Outcomes of litigation or arbitration proceedings;
- Announcements of technological innovations or acquisitions by us or by our competitors;
- Introduction of new products or significant customer wins or losses by us or by our competitors;
- Developments with respect to our intellectual property rights or those of our competitors;
- Fluctuations in the share prices of other companies in the technology and emerging growth sectors;
- General market conditions; and
- Other risk factors set out in this report.

If the market price of our common shares drops significantly, shareholders could institute securities class action lawsuits against us, regardless of the merits of such claims. Such a lawsuit could cause us to incur substantial costs and could divert the time and attention of our management and other resources from our business.

Fair value assessments of our intangible assets required by GAAP may require us to record significant non-cash charges associated with intangible asset impairment.

Significant portions of our assets, which include customer agreements and relationships, non-compete covenants, existing technologies and trade names, are intangible. We amortize intangible assets on a straight-line basis over their estimated useful lives. We review the carrying value of these assets at least annually for evidence of impairment. In accordance with ASC Topic 360-10-35, "Property, Plant, and Equipment: Overview: Subsequent Measurement" an impairment loss is recognized when the estimate of undiscounted future cash flows generated by such assets is less than the carrying amount. Measurement of the impairment loss is based on the present value of the expected future cash flows. Future fair value assessments of intangible assets may require impairment charges to be recorded in the results of operations for future periods. This could impair our ability to achieve or maintain profitability in the future.

If our common share price decreases to a level such that the fair value of our net assets is less than the carrying value of our net assets, we may be required to record additional significant non-cash charges associated with goodwill impairment.

We account for goodwill in accordance with ASC Topic 350, "Intangibles – Goodwill and Other", which among other things, requires that goodwill be tested for impairment at least annually. We have designated October 31st for our annual impairment test. Should the fair value of our net assets, determined by our market capitalization, be less than the carrying value of our net assets at future annual impairment test dates, we may have to recognize goodwill impairment losses in our results of operations in future periods. This could impair our ability to achieve or maintain profitability in the future.

We have a substantial accumulated deficit and may incur losses in the future. As at April 30, 2019, our accumulated deficit was \$165.4 million, which has been accumulated from 2005 and prior fiscal periods. Although the Company has been profitable since 2005, there can be no assurance that we will not incur losses again in the future. If we fail to maintain profitability, the market price of our common shares may decline.

THE DESCARTES SYSTEMS GROUP INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(US DOLLARS IN THOUSANDS; US GAAP; UNAUDITED)

	April 30, 2019	January 31, 2019 (Audited)
ASSETS		
CURRENT ASSETS		
Cash	29,550	27,298
Accounts receivable (net)		
Trade (Note 5)	33,913	31,493
Other (Note 6)	4,974	4,331
Prepaid expenses and other	12,274	9,027
Inventory (Note 7)	99	95
	80,810	72,244
OTHER LONG-TERM ASSETS (Note 19)	11,296	10,510
PROPERTY AND EQUIPMENT, NET (Note 8)	12,869	12,612
RIGHT-OF-USE ASSETS (Note 13)	10,444	-
DEFERRED INCOME TAXES	23,535	3,598
INTANGIBLE ASSETS, NET (Note 9)	266,737	176,192
GOODWILL (Note 10)	497,844	378,178
	903,535	653,334
LIABILITIES AND SHAREHOLDERS' EQUITY		
CURRENT LIABILITIES		
Accounts payable	5,294	5,147
Accrued liabilities (Note 11)	34,140	29,392
Lease obligations (Note 13)	3,433	-
Income taxes payable	1,840	1,592
Deferred revenue (Note 19)	41,519	34,236
	86,226	70,367
LONG-TERM DEBT (Note 12)	242,670	25,464
LONG-TERM LEASE OBLIGATIONS (Note 13)	7,394	-
LONG-TERM DEFERRED REVENUE (Note 19)	1,050	855
LONG-TERM INCOME TAXES PAYABLE	7,590	7,634
DEFERRED INCOME TAXES	9,575	15,507
	354,505	119,827
COMMITMENTS, CONTINGENCIES AND GUARANTEES (Note 14)		
SHAREHOLDERS' EQUITY (Note 15)		
Common shares – unlimited shares authorized; Shares issued and outstanding totaled 77,222,956 at April 30, 2019 (January 31, 2019 – 76,864,866)	286,714	276,753
Additional paid-in capital	455,478	454,722
Accumulated other comprehensive loss	(27,715)	(25,201)
Accumulated deficit	(165,447)	(172,767)
	549,030	533,507
	903,535	653,334

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

THE DESCARTES SYSTEMS GROUP INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS

(US DOLLARS IN THOUSANDS, EXCEPT PER SHARE AND WEIGHTED AVERAGE SHARE AMOUNTS; US GAAP;
 UNAUDITED)

	Three Months Ended	
	April 30, 2019	April 30, 2018
REVENUES	78,004	67,018
COST OF REVENUES	19,856	18,584
GROSS MARGIN	58,148	48,434
EXPENSES		
Sales and marketing	10,132	9,136
Research and development	12,728	11,937
General and administrative	8,478	6,924
Other charges (Note 20)	2,064	1,140
Amortization of intangible assets	12,777	9,552
	46,179	38,689
INCOME FROM OPERATIONS	11,969	9,745
INTEREST EXPENSE	(2,159)	(546)
INVESTMENT INCOME	71	54
INCOME BEFORE INCOME TAXES	9,881	9,253
INCOME TAX EXPENSE (Note 18)		
Current	1,735	1,944
Deferred	826	323
	2,561	2,267
NET INCOME	7,320	6,986
EARNINGS PER SHARE (Note 16)		
Basic	0.09	0.09
Diluted	0.09	0.09
WEIGHTED AVERAGE SHARES OUTSTANDING (thousands)		
Basic	77,149	76,793
Diluted	78,273	77,650

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

THE DESCARTES SYSTEMS GROUP INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(US DOLLARS IN THOUSANDS; US GAAP; UNAUDITED)

	Three Months Ended	
	April 30, 2019	April 30, 2018
Comprehensive income		
Net Income	7,320	6,986
Other comprehensive loss:		
Foreign currency translation adjustment, net of income tax expense (recovery) of (\$102) for the period ended April 30, 2019 (April 30, 2018 - (\$109))	(2,514)	(4,824)
Total other comprehensive loss	(2,514)	(4,824)
COMPREHENSIVE INCOME	4,806	2,162

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

THE DESCARTES SYSTEMS GROUP INC.
CONDENSED CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY
(US DOLLARS IN THOUSANDS; US GAAP; UNAUDITED)

	Three Months Ended	
	April 30, 2019	April 30, 2018
Common shares		
Balance, beginning of period	276,753	274,536
Stock options and share units exercised	916	571
Acquisitions (Note 3)	9,045	-
Balance, end of period	286,714	275,107
Additional paid-in capital		
Balance, beginning of period	454,722	451,151
Stock-based compensation expense (Note 17)	939	733
Stock options and share units exercised	(183)	(118)
Balance, end of period	455,478	451,766
Accumulated other comprehensive loss		
Balance, beginning of period	(25,201)	(15,252)
Other comprehensive loss, net of income taxes	(2,514)	(4,824)
Balance, end of period	(27,715)	(20,076)
Accumulated deficit		
Balance, beginning of period	(172,767)	(211,623)
Net income	7,320	6,986
Cumulative adjustment upon modified retrospective accounting policy adoption	-	7,579
Balance, end of period	(165,447)	(197,058)
Total Shareholders' Equity	549,030	509,739

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

THE DESCARTES SYSTEMS GROUP INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(US DOLLARS IN THOUSANDS; US GAAP; UNAUDITED)

	Three Months Ended	
	April 30, 2019	April 30, 2018
OPERATING ACTIVITIES		
Net income	7,320	6,986
Adjustments to reconcile net income to cash provided by operating activities:		
Depreciation	892	907
Amortization of intangible assets	12,777	9,552
Stock-based compensation expense (Note 17)	939	733
Other non-cash operating activities	(171)	(30)
Deferred tax expense	826	323
Changes in operating assets and liabilities:		
Accounts receivable		
Trade	2,660	(1,875)
Other	(429)	225
Prepaid expenses and other	(3,484)	(1,675)
Inventory	(3)	18
Accounts payable	288	4,037
Accrued liabilities	3,779	(1,064)
Income taxes payable	200	180
Operating leases	383	-
Deferred revenue	(2,542)	536
Cash provided by operating activities	23,435	18,853
INVESTING ACTIVITIES		
Additions to property and equipment	(1,398)	(965)
Acquisition of subsidiaries, net of cash acquired (Note 3)	(239,863)	(32,382)
Cash used in investing activities	(241,261)	(33,347)
FINANCING ACTIVITIES		
Proceeds from borrowing on the credit facility	241,206	33,167
Credit facility repayments	(19,932)	(17,610)
Payment of debt issuance costs	(1,382)	-
Issuance of common shares for cash, net of issuance costs (Note 15)	732	453
Cash provided by financing activities	220,624	16,010
Effect of foreign exchange rate changes on cash	(546)	(451)
Increase in cash	2,252	1,065
Cash, beginning of period	27,298	35,145
Cash, end of period	29,550	36,210
Supplemental disclosure of cash flow information:		
Cash paid during the period for interest	2,086	440
Cash paid during the period for income taxes	1,065	1,259

The accompanying notes are an integral part of these unaudited condensed consolidated financial statements.

THE DESCARTES SYSTEMS GROUP INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

(TABULAR AMOUNTS IN THOUSANDS OF US DOLLARS, EXCEPT PER SHARE AMOUNTS OR AS OTHERWISE INDICATED;
US GAAP; UNAUDITED)

Note 1 - Description of the Business

The Descartes Systems Group Inc. ("Descartes," "Company," "our" or "we") is a provider of global logistics technology solutions. Customers use our modular, software-as-a-service ("SaaS") and data solutions to route, schedule, track and measure delivery resources; plan, allocate and execute shipments; rate, audit and pay transportation invoices; access and analyze global trade data; research and perform trade tariff and duty calculations; file customs and security documents for imports and exports; and complete numerous other logistics processes by participating in a large, collaborative multi-modal logistics community. Our pricing model provides our customers with flexibility in purchasing our solutions either on a subscription, transactional or perpetual license basis. Our primary focus is on serving transportation providers (air, ocean and truck modes), logistics service providers (including third-party logistics providers, freight forwarders and customs brokers) and distribution-intensive companies for which logistics is either a key or a defining part of their own product or service offering, or for which our solutions can provide an opportunity to reduce costs, improve service levels, or support growth by optimizing the use of assets and information.

Note 2 -Basis of Presentation

The accompanying unaudited condensed consolidated financial statements are presented in United States ("US") dollars and are prepared in accordance with generally accepted accounting principles in the US ("GAAP") and the rules and regulations of the Canadian Securities Administrators and US Securities and Exchange Commission ("SEC") for the preparation of condensed financial statements. Accordingly, these unaudited condensed consolidated financial statements do not include all of the information and notes required for compliance with GAAP for annual financial statements. These statements should be read in conjunction with our audited annual consolidated financial statements prepared in accordance with GAAP for the fiscal year ended January 31, 2019.

The unaudited condensed consolidated financial statements reflect all adjustments, which are, in the opinion of management, necessary for a fair presentation of results for the interim periods presented. The preparation of these unaudited condensed consolidated financial statements requires management to make estimates and assumptions that affect the amounts reported in the unaudited condensed consolidated financial statements and the accompanying notes. Actual results could differ from these estimates and the results of operations for the interim period should not be considered indicative of results to be expected for the full year ending January 31, 2020.

Our fiscal year commences on February 1st of each year and ends on January 31st of the following year. Our fiscal year, which ends on January 31, 2020, is referred to as the "current fiscal year", "fiscal 2020", "2020" or using similar words. Our previous fiscal year, which ended on January 31, 2019, is referred to as the "previous fiscal year", "fiscal 2019", "2019" or using similar words. Other fiscal years are referenced by the applicable year during which the fiscal year ends. For example, "2021" refers to the annual period ending January 31, 2021 and the "fourth quarter of 2021" refers to the quarter ending January 31, 2021.

Except for the changes below, the significant accounting policies used in preparing these condensed consolidated financial statements are unchanged from those disclosed in the Company's fiscal 2019 annual consolidated financial statements and have been applied consistently to all periods presented in these condensed consolidated financial statements.

Recently adopted accounting pronouncements

In February 2016, the FASB issued Accounting Standards Update 2016-02, "Leases (Topic 842)" ("ASU 2016-02") and issued subsequent amendments to the initial guidance during 2018, collectively referred

to as "ASC 842". These updates supersede the lease guidance in ASC Topic 840, "Leases" ("ASC 840") and require the recognition of lease assets and lease liabilities by lessees for most leases previously classified as operating leases under ASC Topic 840. Leases will continue to be classified as either operating or finance. ASC 842 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2018, which is our fiscal year that began on February 1, 2019 (fiscal 2020). The Company has adopted ASC 842 as of February 1, 2019 using the cumulative effect method and therefore the comparative information has not been restated and continues to be reported under ASC Topic 840.

The adoption of ASC 842 resulted in an increase to right-of-use ("ROU") assets and lease liabilities of \$10.4 million as of February 1, 2019. The adoption of ASC 842 did not have a material impact on either our consolidated statement of operations or our consolidated statement of cash flows.

On adoption of ASC 842, we have elected to apply the practical expedient to carry forward our current assessments of whether a contract contains a lease, lease classification, and amounts capitalized as initial direct costs. In addition, we have elected the hindsight practical expedient to determine lease term for existing leases.

Leases

At the inception of a contract we assess whether a contract is, or contains, a lease based on whether the contract conveys the right to control the use of an identified asset for a period of time in exchange for consideration. We have building lease agreements with lease and non-lease components, which are accounted for separately. For computer equipment and vehicle leases, we have elected to account for the lease and non-lease components as a single lease component.

We recognize an ROU asset and a lease liability at the lease commencement date. The ROU asset is initially measured based on the initial amount of the lease liability adjusted for any lease payments made at or before the commencement date, plus any initial direct costs incurred and less any lease incentives received. The assets are depreciated to the earlier of the end of the useful life of the ROU asset or the lease term using the straight-line method as this most closely reflects the expected pattern of consumption of the future economic benefits. The lease term includes periods covered by an option to extend if the Company is reasonably certain to exercise that option.

The lease liability is initially measured at the present value of the future lease payments at the commencement date, discounted using the interest rate implicit in the lease or, if that rate cannot be readily determined, the Company's incremental borrowing rate. As most of our leases do not provide an implicit rate, we use our incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments.

The lease liability is measured at amortized cost using the effective interest method. It is remeasured when there is a change in future lease payments arising from a change in an index or rate, if there is a change in the Company's estimate of the amount expected to be payable under a residual value guarantee, or if the Company changes its assessment of whether it will exercise a purchase, extension or termination option. When the lease liability is remeasured, a corresponding adjustment is made to the carrying amount of the ROU asset, or is recorded in profit or loss if the carrying amount of the ROU asset has been reduced to zero.

We have elected to apply the practical expedient not to recognize ROU assets and lease liabilities for short-term leases that have a lease term of 12 months or less. The lease payments associated with these leases is recognized as an expense on a straight-line basis over the lease term.

Recently adopted accounting pronouncements

In February 2016, the FASB issued Accounting Standards Update 2016-02, "Leases (Topic 842)" ("ASU 2016-02") and issued subsequent amendments to the initial guidance during 2018, collectively referred to as "ASC 842". These updates supersede the lease guidance in ASC Topic 840, "Leases" and require the recognition of lease assets and lease liabilities by lessees for most leases previously classified as operating

leases under ASC Topic 840. Leases will continue to be classified as either operating or finance. ASC 842 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2018, which is our fiscal year that began on February 1, 2019 (fiscal 2020). The Company has adopted ASC 842 in the first quarter of fiscal 2020 using the cumulative effect method and therefore the comparative information has not been restated and continues to be reported under ASC 840.

As permitted under ASC 842, we have elected to apply the practical expedient to carry forward our current assessments of whether a contract contains a lease, lease classification, remaining lease terms and amounts capitalized as initial direct costs. We have also elected to apply the practical expedient not to recognize ROU assets and lease liabilities for short-term leases that have a lease term of 12 months or less.

The adoption of ASC 842 resulted in an increase to ROU assets and lease liabilities of \$10.4 million as of February 1, 2019. The adoption of ASC 842 did not have a material impact on either our consolidated statement of operations or our consolidated statement of cash flows.

Recently issued accounting pronouncements

In June 2016, the FASB issued Accounting Standards Update 2016-13, "Financial Instruments – Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments" ("ASU 2016-13") and issued subsequent amendments to the initial guidance during 2020, collectively referred to as "ASC 326". ASC 326 requires measurement and recognition of expected credit losses for financial assets held. ASC 326 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2019, which will be our fiscal year beginning February 1, 2020 (fiscal 2021). Early adoption is permitted. The Company will adopt this guidance in the first quarter of fiscal 2021 and is currently evaluating the impact that the adoption will have on its results of operations, financial position and disclosures.

In January 2017, the FASB issued Accounting Standards Update 2017-04, "Intangibles – Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment" ("ASU 2017-04"). ASU 2017-04 simplifies how an entity is required to test goodwill for impairment. ASU 2017-04 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2019, which will be our fiscal year beginning February 1, 2020 (fiscal 2021). Early adoption is permitted. The Company will adopt this guidance in the first quarter of fiscal 2021. The adoption of this amendment is not expected to have a material impact on our results of operations or disclosures.

In August 2018, the FASB issued Accounting Standards Update 2018-15, "Intangibles – Goodwill and Other – Internal-Use Software (Subtopic 350-40): Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract" ("ASU 2018-15"). ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. ASU 2018-15 is effective for annual periods, and interim periods within those annual periods, beginning after December 15, 2019, which will be our fiscal year beginning February 1, 2020 (fiscal 2021). Early adoption is permitted. The Company will adopt this guidance in the first quarter of fiscal 2021. The adoption of this amendment is not expected to have a material impact on our results of operations or disclosures.

Note 3 – Acquisitions

Fiscal 2020 Acquisitions

On February 12, 2019, Descartes acquired substantially all of the assets of the businesses run by the Management Systems Resources Inc. group of companies (collectively, "Visual Compliance"), a provider of software solutions and services to automate customs, trade and fiscal compliance processes including denied and restricted party screening processes and export licensing. The purchase price for the acquisition was approximately \$248.9 million, net of cash acquired, which was funded from a combination of drawing on Descartes' existing credit facility and issuing to the sellers 0.3 million Descartes common

shares from treasury. The completion of the initial purchase price allocation is pending the finalization of the fair value for certain taxation-related balances, accrued liability balances as well as potential unrecorded liabilities. We expect to finalize the purchase price allocation on or before February 12, 2020.

For the business acquired during fiscal 2020, we incurred acquisition-related costs of \$1.4 million for the three month period ended April 30, 2019. The acquisition-related costs were primarily for advisory services and are included in other charges in our condensed consolidated statements of operations. During the three month period ended April 30, 2019, we have recognized revenues of \$5.7 million, and net income (excluding any interest costs on financing the acquisition) of \$1.2 million from Visual Compliance since the date of acquisition in our consolidated statements of operations.

The preliminary purchase price allocation for the business acquired during 2020, which has not been finalized, is as follows:

	<u>Visual Compliance</u>
Purchase price consideration:	
Cash, less cash acquired related to Visual Compliance (\$170)	239,863
Common shares issued	9,045
Net working capital adjustments (receivable) / payable	(219)
	<u>248,689</u>
Allocated to:	
Current assets, excluding cash acquired	4,775
Property and equipment	30
Deferred income tax asset	27,423
Right-of-use assets	1,188
Current liabilities	(645)
Deferred revenue	(10,200)
Lease obligations	(1,188)
Deferred income tax liability	(998)
Net tangible assets (liabilities) assumed	<u>20,385</u>
Finite life intangible assets acquired:	
Customer agreements and relationships	32,186
Existing technology	69,422
Trade names	528
Non-compete covenants	3,165
Goodwill	<u>123,003</u>
	<u>248,689</u>

The above transaction was accounted for using the acquisition method in accordance with ASC Topic 805, "Business Combinations". The purchase price allocation in the table above represents our estimates of the allocation of the purchase price and the fair value of net assets acquired. The preliminary purchase price allocation may differ from the final purchase price allocation, and these differences may be material. Revisions to the allocation will occur as additional information about the fair value of assets and liabilities becomes available. The final purchase price allocation will be completed within one year from the acquisition dates.

The acquired intangible assets are being amortized over their estimated useful lives as follows:

	Visual Compliance
Customer agreements and relationships	14 years
Existing technology	7 years
Trade names	5 years
Non-compete covenants	5 years

Fiscal 2019 Acquisitions

On February 2, 2018, Descartes acquired Aljex Software, Inc. (“Aljex”), a cloud-based provider of back-office transportation management solutions for freight brokers and transportation providers. US-based Aljex helps customers automate business processes and create electronic documents critical for executing transportation moves through the lifecycle of a shipment. The purchase price for the acquisition was approximately \$32.4 million, net of cash acquired, which was funded from drawing on Descartes’ existing credit facility. The gross contractual amount of trade receivables acquired was \$0.2 million with a fair value of \$0.2 million at the date of acquisition. Our acquisition date estimate of contractual cash flows not expected to be collected was nominal. The purchase price was finalized in the three month period ended January 31, 2019 with no adjustments.

On June 22, 2018, Descartes acquired certain assets of Velocity Mail, LLC (“Velocity Mail”), an electronic transportation network that provides global air carriers with mail and parcel shipment scanning and tracking solutions. Using US-based Velocity Mail’s network, global air carriers leverage mobile devices to accurately track shipments and deliveries in real-time. The purchase price for the acquisition was approximately \$26.1 million, net of cash acquired, which was funded from drawing on Descartes’ existing credit facility. The gross contractual amount of trade receivables acquired was \$1.0 million with a fair value of \$1.0 million at the date of acquisition. Our acquisition date estimate of contractual cash flows not expected to be collected was nominal. The completion of the initial purchase price allocation is pending the finalization of the fair value for accrued liability balances as well as potential unrecorded liabilities. We expect to finalize the purchase price allocation on or before June 22, 2019.

On August 21, 2018, Descartes acquired PinPoint GPS Solutions Inc. (“PinPoint”), a provider of fleet tracking and mobile workforce solutions. Canada-based PinPoint helps customers collect real-time location information on trucks and mobile workers using technology, including Geotab (telematics) and SkyBitz (trailer tracking). The purchase price for the acquisition was approximately \$11.0 million (CAD \$14.4 million), net of cash acquired, which was funded from a combination of drawing on Descartes’ existing credit facility and issuing to the sellers less than 0.1 million Descartes common shares from treasury. Additional contingent consideration of up to \$2.3 million (CAD \$3.0 million) in cash is payable if certain revenue performance targets are met by PinPoint in the two years following the acquisition. The fair value of the contingent consideration was valued at \$0.7 million at the acquisition date. The gross contractual amount of trade receivables acquired was \$0.5 million with a fair value of \$0.5 million at the date of acquisition. Our acquisition date estimate of contractual cash flows not expected to be collected was nominal. The completion of the initial purchase price allocation is pending the finalization of the fair value for accrued liability balances as well as potential unrecorded liabilities. We expect to finalize the purchase price allocation on or before August 21, 2019.

Pro Forma Results of Operations (Unaudited)

The financial information in the table below summarizes selected results of operations on a pro forma basis as if we had acquired Visual Compliance, PinPoint and Velocity Mail as of the beginning of each of the periods presented.

This pro forma information is for information purposes only and does not purport to represent what our results of operations for the periods presented would have been had the acquisitions of Visual Compliance,

PinPoint and Velocity Mail occurred at the beginning of the period indicated, or to project our results of operations for any future period.

	Three Months Ended	
	April 30, 2019	April 30, 2018
Revenue	79,055	75,911
Net income	6,683	5,609
Earnings per share		
Basic	0.09	0.07
Diluted	0.09	0.07

Note 4 – Fair Value Measurements

ASC Topic 820 “Fair Value Measurements and Disclosures” (Topic 820) defines fair value as the price that would be received upon sale of an asset or paid upon transfer of a liability in an orderly transaction between market participants at the measurement date and in the principal or most advantageous market for that asset or liability. The fair value, in this context, should be calculated based on assumptions that market participants would use in pricing the asset or liability, not on assumptions specific to the entity. In addition, the fair value of liabilities should include consideration of non-performance risk, including our own credit risk.

Topic 820 establishes a fair value hierarchy which prioritizes the inputs used in the valuation methodologies in measuring fair value into three levels:

- Level 1—inputs are based upon unadjusted quoted prices for identical instruments traded in active markets.
- Level 2—inputs are based upon quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in markets that are not active, and model-based valuation techniques for which all significant assumptions are observable in the market or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3—inputs are generally unobservable and typically reflect management’s estimates of assumptions that market participants would use in pricing the asset or liability. The fair values are therefore determined using model-based techniques that include option pricing models, discounted cash flow models, and similar techniques.

The carrying amounts of the Company’s cash, accounts receivable (net), accounts payable, accrued liabilities and income taxes payable approximate their fair value (a Level 2 measurement) due to their short maturities.

The Company enters into equity derivative contracts including floating-rate equity forwards to partially offset the potential fluctuations of certain future share-based compensation expenses. The Company does not hold derivatives for speculative purposes. As at April 30, 2019, we had equity derivatives for 273,000 Descartes common shares with a weighted average price of \$20.39.

The following table shows the Company's derivative instruments measured at fair value on a recurring basis as of April 30, 2019:

	Fair Value of Derivatives Designated as Hedge Instruments	Fair Value of Derivatives Not Designated As Hedge Instruments	Fair Value
Derivative assets:			
Equity contracts	-	5,304	5,304

The fair value of equity contract derivatives is determined utilizing a valuation model based on the quoted market value of our common shares at the balance sheet date (Level 2 fair value inputs). The fair value of equity contract derivatives is recorded as other current assets and gains and losses are recorded in general and administrative expenses in the consolidated financial statements. For the three month periods ended April 30, 2019 and April 30, 2018, we recognized an expense (recovery) in general and administrative expenses of (\$2.6) million and (\$0.6) million, respectively.

Note 5 – Trade Receivables

	April 30, 2019	January 31, 2019
Trade receivables	35,712	33,350
Less: Allowance for doubtful accounts	(1,799)	(1,857)
	33,913	31,493

Included in accounts receivable are unbilled receivables in the amount of \$1.1 million as at April 30, 2019 (\$1.0 million as at January 31, 2019). For the three month periods ended April 30, 2019 and April 30, 2018 bad debt expense was \$0.2 million and \$0.1 million, respectively.

Note 6 – Other Receivables

	April 30, 2019	January 31, 2019
Net working capital adjustments receivable from acquisitions	508	55
Other receivables	4,466	4,276
	4,974	4,331

Other receivables include receivables related to sales and use taxes, income taxes, non-trade receivables and contract assets. At April 30, 2019, \$0.5 million (\$0.1 million as at January 31, 2019) of the net working capital adjustments receivable from acquisitions is recoverable from amounts held in escrow related to the respective acquisitions. The change in net working capital adjustments receivable from acquisitions is primarily due to the acquisition of Visual Compliance.

Note 7 – Inventory

At April 30, 2019 and January 31, 2019, inventory is entirely comprised of finished goods inventory. Finished goods inventory consists of hardware and related parts for mobile asset units held for sale. For both the three month periods ended April 30, 2019 and April 30, 2018, no provision for excess or obsolete inventories has been recorded in cost of revenues.

Note 8 – Property and Equipment

	April 30,	January 31,
	2019	2019
Cost		
Computer equipment and software	35,489	34,870
Furniture and fixtures	1,266	1,262
Leasehold improvements	469	444
	37,224	36,576
Accumulated amortization		
Computer equipment and software	23,466	23,070
Furniture and fixtures	652	634
Leasehold improvements	237	260
	24,355	23,964
Net	12,869	12,612

Note 9 - Intangible Assets

	April 30,	January 31,
	2019	2019
Cost		
Customer agreements and relationships	207,732	177,224
Existing technology	250,584	184,641
Trade names	8,214	7,754
Non-compete covenants	9,275	6,173
	475,805	375,792
Accumulated amortization		
Customer agreements and relationships	84,978	82,028
Existing technology	116,147	110,051
Trade names	4,564	4,456
Non-compete covenants	3,379	3,065
	209,068	199,600
Net	266,737	176,192

Intangible assets related to our acquisitions are recorded at their fair value at the acquisition date. The change in intangible assets during the three month period ended April 30, 2019 is primarily due to the acquisition of Visual Compliance partially offset by amortization. The balance of the change in intangible assets is due to foreign currency translation.

Intangible assets with a finite life are amortized into income over their useful lives. Amortization expense for existing intangible assets is expected to be \$266.7 million over the following periods: \$51.6 million for the remainder of 2020, \$48.5 million for 2021, \$44.2 million for 2022, \$36.7 million for 2023, \$25.1 million for 2024, \$22.1 million for 2025, and \$38.5 million thereafter. Expected future amortization expense is subject to fluctuations in foreign exchange rates and assumes no future adjustments to acquired intangible assets.

Note 10 – Goodwill

Goodwill is recorded when the consideration paid for an acquisition of a business exceeds the fair value of identifiable net tangible and intangible assets acquired. The following table summarizes the changes in goodwill since January 31, 2018:

	April 30,	January 31,
	2019	2019
Balance at beginning of year	378,178	350,148
Acquisition of Aljex	-	18,903
Acquisition of Velocity Mail	-	8,448
Acquisition of PinPoint	-	6,306
Acquisition of Visual Compliance	123,003	-
Adjustments on account of foreign exchange	(3,337)	(5,627)
Balance at end of year	497,844	378,178

Note 11 - Accrued Liabilities

	April 30,	January 31,
	2019	2019
Accrued compensation and benefits	18,972	16,771
Accrued professional fees	1,328	1,137
Other accrued liabilities	13,840	11,484
	34,140	29,392

Other accrued liabilities include accrued expenses related to third party resellers and royalties, suppliers, accrued restructuring charges and accrued contingent acquisition purchase consideration.

Note 12 - Debt

On January 25, 2019, we amended and increased our existing \$150.0 million senior secured revolving credit facility. The newly amended and increased facility is now a \$350.0 million revolving operating credit facility to be available for general corporate purposes, including the financing of ongoing working capital needs and acquisitions. With the approval of the lenders, the credit facility can be expanded to a total of \$500.0 million. The credit facility has a five-year maturity with no fixed repayment dates prior to the end of the five-year term ending January 2024. Borrowings under the credit facility are secured by a first charge over substantially all of Descartes' assets. Depending on the type of advance, interest rates under the revolving operating portion of the credit facility are based on the Canada or US prime rate, Bankers' Acceptance (BA) or London Interbank Offered Rate (LIBOR) plus an additional 0 to 250 basis points based on the ratio of net debt to adjusted earnings before interest, taxes, depreciation and amortization, as defined in the credit agreement. A standby fee of between 20 to 40 basis points will be charged on all undrawn amounts. The credit facility contains certain customary representations, warranties and guarantees, and covenants.

Long-term debt is comprised of the following:

	April 30,	January 31,
	2019	2019
Credit facility	242,670	25,464
Total amount outstanding	242,670	25,464
Available for use	107,330	324,536

As at April 30, 2019, the outstanding balance of \$242.7 million was required to be repaid in January 2024. We were in compliance with the covenants of the credit facility as of April 30, 2019.

As at April 30, 2019, we had outstanding letters of credit of approximately \$0.1 million (\$0.2 million as at January 31, 2019), which were not related to our credit facility.

Note 13 - Leases

We have operating leases for buildings, vehicles and computer equipment. Our leases have remaining terms of 1 to 7 years, some of which include options to extend the leases for up to 3 years.

The components of operating lease expense were as follows:

	Three Months Ended April 30, 2019
Operating lease cost	1,182
Short-term lease cost	296
Total operating lease cost	1,478

Supplemental cash flow information related to operating leases was as follows:

	Three Months Ended April 30, 2019
Operating cash outflows from operating leases included in measurement of lease liabilities	805
New ROU assets obtained in exchange for lease obligations	1,020

Supplemental information related to operating leases was as follows:

	April 30, 2019
Weighted average remaining lease term (years)	4
Weighted average discount rate (%)	3.4

Maturities of operating lease liabilities were as follows as of April 30, 2019:

	Operating Leases
Years Ended January 31,	
Remainder of 2020	2,832
2021	3,045
2022	1,994
2023	1,502
2024	1,081
2025 and thereafter	1,200
Total lease payments	11,654
Less: imputed interest	(827)
Total lease obligations	10,827
Current	3,433
Long-term	7,394

Disclosures Related to Periods Prior to Adoption of New Lease Standard

As of January 31, 2019, future minimum lease payment obligations under non-cancelable operating and capital lease obligations were as follows:

Years Ended January 31,	Operating Leases	Capital Leases	Total
2020	4,627	51	4,678
2021	3,046	2	3,048
2022	1,979	-	1,979
2023	1,470	-	1,470
2024	1,038	-	1,038
2025	737	-	737
2026	733	-	733
2027	271	-	271
	13,901	53	13,954

For the three month period ended April 30, 2018, rental expense from operating leases was \$1.3 million

Note 14 - Commitments, Contingencies and Guarantees

Commitments

As described in Note 2 to the audited consolidated financial statements for 2019 included in our 2019 Annual Report, we maintain deferred share unit ("DSU") and cash-settled restricted share unit ("CRSU") plans for our directors and employees. Any payments made pursuant to these plans are settled in cash. For DSUs and CRSUs, the units vest over time and the liability recognized at any given consolidated balance sheet date reflects only those units vested at that date that have not yet been settled in cash. As such, we had an unrecognized aggregate liability for the unvested CRSUs of \$1.6 million at April 30, 2019. As at April 30, 2019 there were no unvested DSUs. The ultimate liability for any payment of DSUs and CRSUs is dependent on the trading price of our common shares. To partially offset our exposure to fluctuations in our stock price, we have entered into equity derivative contracts, including floating-rate equity forwards. As at April 30, 2019, we had equity derivatives for 273,000 Descartes common shares and a DSU liability for 279,340 Descartes common shares, resulting in minimal net exposure resulting from changes to our share price.

Contingencies

We are subject to a variety of other claims and suits that arise from time to time in the ordinary course of our business. The consequences of these matters are not presently determinable but, in the opinion of management after consulting with legal counsel, the ultimate aggregate potential liability is not currently expected to have a material effect on our results of operations or financial position.

Product Warranties

In the normal course of operations, we provide our customers with product warranties relating to the performance of our hardware, software and services. To date, we have not encountered material costs as a result of such obligations and have not accrued any liabilities related to such obligations in our consolidated financial statements.

Business combination agreements

In respect of our acquisitions of Appterra LLC, Z-Firm LLC ("ShipRush") and PinPoint, up to \$3.8 million in cash may become payable if certain revenue performance targets are met in the two years following the acquisition. A balance of \$2.2 million is accrued related to the fair value of this contingent consideration as at April 30, 2019.

Guarantees

In the normal course of business, we enter into a variety of agreements that may contain features that meet the definition of a guarantee under ASC Topic 460, "Guarantees". The following lists our significant guarantees:

Intellectual property indemnification obligations

We provide indemnifications of varying scope to our customers against claims of intellectual property infringement made by third parties arising from the use of our products. In the event of such a claim, we are generally obligated to defend our customers against the claim and we are liable to pay damages and costs assessed against our customers that are payable as part of a final judgment or settlement. These intellectual property infringement indemnification clauses are not generally subject to any dollar limits and remain in force for the term of our license agreement with our customer, which license terms are typically perpetual. Historically, we have not encountered material costs as a result of such indemnification obligations.

Other indemnification agreements

In the normal course of operations, we enter into various agreements that provide general indemnities. These indemnities typically arise in connection with purchases and sales of assets, securities offerings or buy-backs, service contracts, administration of employee benefit plans, retention of officers and directors, membership agreements, customer financing transactions, and leasing transactions. In addition, our corporate by-laws provide for the indemnification of our directors and officers. Each of these indemnities requires us, in certain circumstances, to compensate the counterparties for various costs resulting from breaches of representations or obligations under such arrangements, or as a result of third party claims that may be suffered by the counterparty as a consequence of the transaction. We believe that the likelihood that we could incur significant liability under these obligations is remote. Historically, we have not made any significant payments under such indemnities.

In evaluating estimated losses for the guarantees or indemnities described above, we consider such factors as the degree of probability of an unfavorable outcome and the ability to make a reasonable estimate of the amount of loss. We are unable to make a reasonable estimate of the maximum potential amount payable under such guarantees or indemnities as many of these arrangements do not specify a maximum potential dollar exposure or time limitation. The amount also depends on the outcome of future events and conditions, which cannot be predicted. Given the foregoing, to date, we have not accrued any liability in our financial statements for the guarantees or indemnities described above.

Note 15 – Share Capital

On June 6, 2018, we filed a final short-form base shelf prospectus (the "Base Shelf Prospectus"), allowing us to offer and issue the following securities: (i) common shares; (ii) preferred shares; (iii) senior or subordinated unsecured debt securities; (iv) subscription receipts; (v) warrants; and (vi) securities comprised of more than one of the aforementioned common shares, preferred shares, debt securities, subscription receipts and/ or warrants offered together as a unit. These securities may be offered separately or together, in separate series, in amounts, at prices and on terms to be set forth in one or more shelf prospectus supplements. The aggregate initial offering price of securities that may be sold by us (or certain of our current or future shareholders) pursuant to the Base Shelf Prospectus during the 25-month period that the Base Shelf Prospectus, including any amendments thereto, remains valid is limited to an aggregate of \$750 million.

For the three month periods ended April 30, 2019 and April 30, 2018, cash flows provided from stock options and share units exercised were \$0.7 million and \$0.5 million.

Note 16 - Earnings Per Share

The following table sets forth the computation of basic and diluted earnings per share ("EPS") (number of shares in thousands):

	Three Months Ended	
	April 30, 2019	April 30, 2018
Net income for purposes of calculating basic and diluted earnings per share	7,320	6,986
Weighted average shares outstanding	77,149	76,793
Dilutive effect of employee stock options	288	162
Dilutive effect of restricted and performance share units	836	695
Weighted average common and common equivalent shares outstanding	78,273	77,650
Earnings per share		
Basic	0.09	0.09
Diluted	0.09	0.09

For the three month periods ended April 30, 2019 and April 30, 2018, 361,264 and 272,144 options, respectively, were excluded from the calculation of diluted EPS as those options had an exercise price greater than or equal to the average market value of our common shares during the applicable periods and their inclusion would have been anti-dilutive. For the three month periods ended April 30, 2019 and April 30, 2018, the application of the treasury stock method excluded nil and 2,475 options, respectively, from the calculation of diluted EPS as the assumed proceeds from the unrecognized stock-based compensation expense of such options that are attributed to future service periods made such options anti-dilutive.

Additionally, for the three month periods ended April 30, 2019 and April 30, 2018, the application of the treasury stock method excluded PSUs and RSUs of 91,340 and 54,351, respectively, from the calculation of diluted EPS as the unrecognized stock-based compensation expense of such PSUs and RSUs that are attributed to future service periods made such PSUs and RSUs anti-dilutive.

Note 17 - Stock-Based Compensation Plans

Total estimated stock-based compensation expense recognized in our consolidated statement of operations was as follows:

	Three Months Ended	
	April 30, 2019	April 30, 2018
Cost of revenues	44	31
Sales and marketing	127	85
Research and development	56	33
General and administrative	712	584
Effect on net income	939	733

Differences between how GAAP and applicable income tax laws treat the amount and timing of recognition

of stock-based compensation expense may result in a deferred tax asset. We have recorded a valuation allowance against any such deferred tax asset except for \$0.6 million (\$0.6 million at January 31, 2019) recognized in the United States. We realized a nominal tax benefit in connection with stock options exercised during both the three month periods ended April 30, 2019 and April 30, 2018.

Stock Options

As of April 30, 2019, we had 1,072,492 stock options granted and outstanding under our shareholder-approved stock option plan and 3,643,874 remained available for grant. In addition, we had 106,500 stock options outstanding pursuant to option grants made outside of our shareholder-approved stock option plan as permitted under the rules of the Toronto Stock Exchange in certain circumstances.

As of April 30, 2019, \$4.9 million of total unrecognized compensation costs related to non-vested stock option awards is expected to be recognized over a weighted average period of 3.3 years. The total fair value of stock options vested during the three month period ended April 30, 2019 was nominal.

The total number of options granted during the three month periods ended April 30, 2019 and April 30, 2018 were 361,264 and 272,144, respectively. The weighted average grant-date fair value of options granted during the three month periods ended April 30, 2019 and April 30, 2018 was \$8.94 and \$7.10 per option, respectively.

The weighted-average assumptions were as follows:

	Three Months Ended	
	April 30, 2019	April 30, 2018
Expected dividend yield (%)	-	-
Expected volatility (%)	23.5	23.6
Risk-free rate (%)	1.4	2.0
Expected option life (years)	5	5

A summary of option activity under all of our plans is presented as follows:

	Number of Stock Options Outstanding	Weighted-Average Exercise Price	Weighted-Average Remaining Contractual Life (years)	Aggregate Intrinsic Value (in millions)
Balance at January 31, 2019	879,338	\$21.41	4.7	8.7
Granted	361,264	\$37.84		
Exercised	(61,610)	\$11.69		
Balance at April 30, 2019	1,178,992	\$26.61	5.4	16.0
Vested or expected to vest at April 30, 2019	1,178,992	\$26.61	5.4	16.0
Exercisable at April 30, 2019	484,760	\$19.52	4.2	10.0

The total intrinsic value of options exercised during the three month periods ended April 30, 2019 and April 30, 2018 was \$1.5 million and \$0.7 million, respectively.

Performance Share Units

A summary of PSU activity is as follows:

	Number of PSUs Outstanding	Weighted- Average Granted Date Fair Value	Weighted- Average Remaining Contractual Life (years)	Aggregate Intrinsic Value (in millions)
Balance at January 31, 2019	530,383	\$18.02	5.5	16.6
Granted	53,729	\$53.38		
Performance units issued	45,762	\$23.12		
Balance at April 30, 2019	629,874	\$21.08	5.8	25.3
Vested or expected to vest at April 30, 2019	629,874	\$21.08	5.8	25.3
Exercisable at April 30, 2019	470,673	\$19.94	4.8	18.9

The aggregate intrinsic value represents the total pre-tax intrinsic value (the aggregate closing share price of our common shares on April 30, 2019) that would have been received by PSU holders if all PSUs had been vested on April 30, 2019.

As of April 30, 2019, \$4.3 million of total unrecognized compensation costs related to non-vested awards is expected to be recognized over a weighted average period of 1.8 years. The total fair value of PSUs vested during the three month period ended April 30, 2019 was \$1.1 million.

Restricted Share Units

A summary of RSU activity is as follows:

	Number of RSUs Outstanding	Weighted- Average Granted Date Fair Value	Weighted- Average Remaining Contractual Life (years)	Aggregate Intrinsic Value (in millions)
Balance at January 31, 2019	337,066	\$14.42	5.6	10.6
Granted	37,611	\$37.84		
Balance at April 30, 2019	374,677	\$16.49	5.8	15.1
Vested or expected to vest at April 30, 2019	374,677	\$16.49	5.8	15.1
Exercisable at April 30, 2019	299,773	\$12.65	4.9	12.0

The aggregate intrinsic value represents the total pre-tax intrinsic value (the aggregate closing share price of our common shares on April 30, 2019) that would have been received by RSU holders if all RSUs had been vested on April 30, 2019.

As of April 30, 2019, \$2.2 million of total unrecognized compensation costs related to non-vested awards is expected to be recognized over a weighted average period of 2.1 years. The total fair value of RSUs vested during the three month period ended April 30, 2019 was nil.

Deferred Share Unit Plan

As at April 30, 2019, the total number of DSUs held by participating directors was 279,340 (277,390 at January 31, 2019), representing an aggregate accrued liability of \$11.1 million (\$8.6 million at January 31, 2019). During the three month period ended April 30, 2019, 1,950 DSUs were granted. The fair value of the DSU liability is based on the closing price of our common shares at the balance sheet date. The total compensation cost related to DSUs recognized during the three month periods ended April 30, 2019 and April 30, 2018 was \$2.7 million and \$0.7 million, respectively.

Cash-Settled Restricted Share Unit Plan

A summary of activity under our CRSU plan is as follows:

	Number of CRSUs Outstanding	Weighted- Average Remaining Contractual Life (years)
Balance at January 31, 2019	45,063	1.6
Granted	30,086	
Vested and settled in cash	(7,667)	
Balance at April 30, 2019	67,482	2.0
Non-vested at April 30, 2019	67,482	2.0

We recognize the compensation cost of the CRSUs ratably over the service/vesting period relating to the grant and have recorded an aggregate accrued liability of \$1.1 million at April 30, 2019 (\$0.6 million at January 31, 2019). As at April 30, 2019, the unrecognized aggregate liability for the unvested CRSUs was \$1.6 million (\$0.8 million at January 31, 2019). The fair value of the CRSU liability is based on the closing price of our common shares at the balance sheet date. The total compensation cost related to CRSUs recognized during the three month periods ended April 30, 2019 and April 30, 2018 was \$0.3 million and \$0.2 million, respectively.

Note 18 - Income Taxes

The effective tax rate (which is the provision for income taxes expressed as a percentage of income before income taxes) was 26% and 25% for the three month periods ended April 30, 2019 and 2018, respectively. The increase in the three month period ended April 30, 2019 compared to the same period in fiscal 2019 was primarily a result of an increase in taxable income in the US partially offset by a decrease in taxable income in Canada as a result of more income being sheltered by tax attributes. The remainder of the differences are due to normal course movements and non-material items.

Note 19 – Contract Balances, Performance Obligations and Contract Costs

Deferred Revenue

The following table presents the changes in the deferred revenue balance as follows:

	<u>Deferred Revenue</u>
Balance at January 31, 2019	35,091
Recognition of unearned revenue	(4,622)
Deferral of revenue	5,937
Increases from business combinations	6,432
Effect of movements in foreign exchange	(269)
Balance at April 30, 2019	<u>42,569</u>
Current	41,519
Long-term	<u>1,050</u>

Performance Obligations

As of April 30, 2019, approximately \$199.4 million of revenue is expected to be recognized in the future related to performance obligations that are unsatisfied (or partially unsatisfied) at the end of the reporting period. We expect to recognize revenue on approximately 80% of these remaining performance obligations over the next 24 months with the balance recognized thereafter.

Contract Assets

The following table presents the changes in the contract assets balance as follows:

	<u>Contract Assets</u>
Balance at January 31, 2019	813
Transfers to trade receivables from contract assets	(116)
Increases as a result of delivered term licenses recognized as revenue during the period, net of amounts transferred to trade receivables	267
Effect of movements in foreign exchange	(7)
Balance at April 30, 2019	<u>955</u>

Contract Costs

Capitalized contract costs net of accumulated amortization is \$8.0 million at April 30, 2019 (\$7.3 million at January 31, 2019). Capitalized contract costs are amortized consistent with the pattern of transfer to the customer for the goods and services to which the asset relates. For the three month periods ended April 30, 2019 and April 30, 2018, the total contract cost amortization included in sales and marketing expenses was \$0.5 million and \$0.4 million, respectively. For both the three month periods ended April 30, 2019 and April 30, 2018, there was no impairment loss in relation to the capitalized contract costs.

Note 20 - Other Charges

Other charges are comprised of acquisition-related costs and restructuring initiatives which have been undertaken from time to time under various restructuring plans. Acquisition-related costs primarily include advisory services, brokerage services, administrative costs and retention bonuses to employees joining by way of an acquisition, and collectively relate to completed and prospective acquisitions.

The following tables shows the components of other charges as follows:

	Three Months Ended	
	April 30,	April 30,
	2019	2018
Acquisition-related costs	2,064	1,121
Restructuring plans	-	19
	2,064	1,140

Note 21 - Segmented Information

We review our operating results, assess our performance, make decisions about resources, and generate discrete financial information at the single enterprise level. Accordingly, we have determined that we operate in one reportable business segment providing logistics technology solutions. The following tables provide our disaggregated revenue information by geographic location of customer and revenue type:

	Three Months Ended	
	April 30,	April 30,
	2019	2018
Revenues		
United States	48,804	39,483
Europe, Middle-East and Africa	19,404	20,700
Canada	6,704	3,783
Asia Pacific	3,092	3,052
	78,004	67,018

	Three Months Ended	
	April 30,	April 30,
	2019	2018
Revenues		
Services	67,004	57,806
Professional services and other	8,679	7,268
License	2,321	1,944
	78,004	67,018

License revenues are derived from licenses granted to our customers to use our software products. Services revenues are comprised of ongoing transactional and/or subscription fees for use of our services and products by our customers and maintenance, which include revenues associated with maintenance and support of our services and products. Professional services and other revenues are comprised of professional services revenues from consulting, implementation and training services related to our services and products, hardware revenues and other revenues.

The following table provides information by geographic area of operation for our long-lived assets. Long-lived assets represent property and equipment and intangible assets that are attributed to geographic areas.

	April 30, 2019	January 31, 2019
Total long-lived assets		
United States	126,225	119,958
Europe, Middle-East and Africa	26,258	28,433
Canada	127,123	40,413
	279,606	188,804

Note 22 – Subsequent Event

On May 10, 2019, Descartes acquired Core Transport Technologies NZ Limited ("CORE"), an electronic transportation network that provides global air carriers and ground handlers with shipment scanning and tracking solutions. The purchase price for the acquisition was approximately \$22.0 million, net of cash acquired, which was funded from drawing on Descartes' existing credit facility. Additional contingent consideration of up to \$9.0 million in cash is payable if certain revenue performance targets are met by CORE in the two years following the acquisition. As of the issue date of these consolidated financial statements, the fair value of the acquired assets and liabilities has not been determined.

CORPORATE INFORMATION

Stock Exchange Information

Our common stock trades on the Toronto Stock Exchange under the symbol DSG and on The Nasdaq Stock Market under the symbol DSGX.

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