



PTC Inc.
140 Kendrick Street
Needham, MA 02494, U.S.A.

**PTC INC.
2016 EMPLOYEE STOCK PURCHASE PLAN (THE “ESPP”)**

**Prospectus for the employees of certain European Economic Area (“EEA”) subsidiaries
of PTC Inc., subject to the applicable legislation in each country**



Pursuant to articles L. 412-1 and L. 621-8 of the *Code Monétaire et Financier* and its General Regulation, in particular articles 211-1 to 216-1 thereof, the *Autorité des marchés financiers* (“AMF”) has attached visa number 18-565 dated December 17, 2018, onto this prospectus. This prospectus was established by the issuer and incurs the responsibility of its signatories. The visa, pursuant to the provisions of Article L. 621-8-1-I of the *Code Monétaire et Financier*, was granted after the AMF verified that the document is complete and comprehensible, and that the information it contains is consistent. The visa represents neither the approval of the worthiness of the operation nor the authentication of the financial and accounting information presented.

This prospectus will be made available in printed form to employees of the EEA subsidiaries of PTC Inc. based in countries in which an offering under the ESPP is considered a public offering, subject to the applicable legislation in each country, at the respective head offices of their employers. In addition, this prospectus along with summary translations (as applicable) will be posted on PTC Inc.’s intranet and free copies will be available to the employees upon request by contacting the human resources departments of their employers. This prospectus, together with the French translation of its summary, will also be available on the website of the AMF, www.amf-france.org.

NOTE TO THE PROSPECTUS

This prospectus contains material information concerning PTC Inc. and was established pursuant to articles 211-1 to 216-1 of the AMF General Regulation. Pursuant to Article 25 of Commission Regulation (EC) No 809/2004 of 29 April 2004, as amended (the "Prospectus Regulation"), this prospectus is composed of the following parts in the following order:

- (1) a table of contents,
- (2) the summary provided for in Article 5(2) of Directive 2003/71/EC of the European Parliament and of the European Council of 4 November 2003, as amended (the "Prospectus Directive") (Part I constitutes the prospectus summary),
- (3) the risk factors linked to the issuer and the type of security covered by the issue, and
- (4) excerpts from Annexes I and III of the Prospectus Regulation which, by application of Articles 3, 4, and 6 of the Prospectus Regulation and question 71 of the European Securities and Markets Authority ("ESMA") Q&A¹ are required for this offering of equity securities to employees of PTC Inc. and its affiliates.

This prospectus also contains supplemental information concerning PTC Inc. and the ESPP (Part II - Section B) as well as the following document (Exhibit):

- PTC Inc. 2016 Employee Stock Purchase Plan.

In this prospectus, the terms "the Company," "we," "us," or "our" mean PTC Inc. and its subsidiaries.

All references to "\$" in this prospectus refer to U.S. dollars.

¹ Questions and Answers, Prospectuses: 28th updated version – March 2018 (28 March 2018| ESMA-31-62-780).

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COMPANY REPRESENTATIVE FOR PROSPECTUS

- 1.1 Andrew Miller, Executive Vice President and Chief Financial Officer, acting for and on behalf of PTC Inc.
- 1.2 To my knowledge, and after having taken all reasonable measures for this purpose, the information contained in this prospectus fairly reflects the current situation, and no material omission has been made.
- 1.3 PTC Inc. has obtained a letter from its independent registered public accounting firm in relation to this prospectus. The independent registered public accounting firm has, in accordance with the professional standards and interpretations applicable to it in the United States of America in PCAOB Auditing Standard 2710, *Other Information in Documents Containing Audited Financial Statements*, for the purpose of identifying material inconsistencies with the audited financial statements or a material misstatement of fact, read the prospectus, including the financial information concerning PTC Inc. for the fiscal years ended September 30, 2018, 2017 and 2016 in Part I - Element B.7 and the Selected Financial Data contained in Part II - Section B.10.1 of this prospectus.

/s/ Andrew Miller

Andrew Miller
Executive Vice President and Chief Financial Officer
PTC Inc.
Needham, Massachusetts, United States of America
December 14, 2018

PART I — PROSPECTUS SUMMARY

VISA NUMBER 18-565 DATED DECEMBER 17, 2018 OF THE AMF

Summaries are made up of disclosure requirements known as “Elements.” These Elements are numbered in Sections A – E (A.1 – E.7).

This summary contains all the Elements required to be included in a summary for this type of securities and Issuer. Because some Elements are not required to be addressed, there may be gaps in the numbering sequence of the Elements.

Even though an Element may be required to be inserted in the summary because of the type of securities and Issuer, it is possible that no relevant information can be given regarding the Element. In this case a short description of the Element is included in the summary with the mention of “not applicable.”

SECTION A — INTRODUCTION AND WARNINGS

A.1	Warning to the reader	This summary should be read as an introduction to the prospectus. Any decision to invest in the securities should be based on consideration of the prospectus as a whole by the investor. Where a claim relating to the information contained in the prospectus is brought before a court, the plaintiff investor might, under the national legislation of the Member States, have to bear the costs of translating the prospectus before the legal proceedings are initiated. Civil liability attaches only to those persons who have tabled the summary including any translation thereof, but only if the summary is misleading, inaccurate or inconsistent when read together with the other parts of the prospectus or it does not provide, when read together with the other parts of the prospectus, key information in order to aid investors when considering whether to invest in such securities.
A.2	Consent to use of the prospectus	Not applicable. There is no subsequent resale or final placement of securities by financial intermediaries.

SECTION B — ISSUER

B.1	Legal and commercial name of the issuer	PTC Inc. (“PTC”).
B.2	Domicile and legal form of PTC, the legislation under which it operates and its country of incorporation	PTC’s principal executive offices are located at 140 Kendrick Street, Needham, Massachusetts 02494, U.S.A. In 2019, PTC will be moving into a new worldwide headquarters in the Boston Seaport District and PTC will be vacating its current headquarters space. For further information, please see the risk factor beginning “On September 7, 2017, PTC entered into a lease (...)” in Element D.1 below.

		PTC is a corporation incorporated under the laws of the Commonwealth of Massachusetts, U.S.A.																																			
B.3	Description of the nature of PTC's current operations and its principal activities	<p>PTC is a global software and services company that delivers solutions to enable its industrial customers' digital transformations, helping them to better design, manufacture, operate, and service their products.</p> <p>PTC's Internet of Things ("IoT") solutions are focused on Smart Connected Operations ("SCO"), Smart Connected Products ("SCP"), and Smart Connected Systems, that enable companies to connect factories and plants, smart products, and enterprise systems, bridging the physical and digital worlds, to transform their businesses. PTC's Solutions portfolio of innovative Computer-Aided Design ("CAD") and Product Lifecycle Management ("PLM") solutions enable manufacturers to create, innovate, operate, and service products.</p> <table border="1"> <thead> <tr> <th colspan="4">PTC</th> </tr> <tr> <th colspan="2">IoT Group</th> <th colspan="2">Solutions Group</th> </tr> </thead> <tbody> <tr> <td>Internet of Things (IoT)</td> <td>Augmented Reality (AR)</td> <td>Computer Aided Design (CAD)</td> <td>Product Lifecycle Management (PLM)</td> </tr> <tr> <td>Industrial Innovation Platform enabling connectivity, rapid application development, and purpose-built solutions</td> <td>Industrial AR solutions to increase efficiency and technical proficiency of skilled workers in manufacturing and service settings</td> <td>Effective and collaborative product design across the globe</td> <td>Efficient and consistent management of product information from concept to retirement across the enterprise processes and distributed teams</td> </tr> </tbody> </table> <p>PTC generates revenue through the sale of software licenses, subscriptions (which include license access, support and cloud services for a period of time), support (which includes technical support and software updates when and if available), and services (which include consulting and implementation and training).</p> <p>Segments</p> <p>Effective with the beginning of fiscal 2018, PTC changed its segments. PTC operates within a single industry segment -- computer software and related services. PTC has two operating and reportable segments: (1) Software Products, which includes license, subscription and related support revenue (including updates and technical support) for all its products; and (2) Professional Services, which includes consulting, implementation and training services.</p> <p>The revenue and profit attributable to PTC's operating segments are summarized below.</p> <table border="1"> <thead> <tr> <th rowspan="2"></th> <th colspan="3">Year ended September 30,</th> </tr> <tr> <th>2018</th> <th>2017</th> <th>2016</th> </tr> </thead> <tbody> <tr> <td></td> <td colspan="3" style="text-align: center;">(in thousands)</td> </tr> <tr> <td>Software Products</td> <td></td> <td></td> <td></td> </tr> <tr> <td>Revenue</td> <td style="text-align: right;">\$ 1,088,487</td> <td style="text-align: right;">\$ 987,316</td> <td style="text-align: right;">\$ 943,596</td> </tr> </tbody> </table>	PTC				IoT Group		Solutions Group		Internet of Things (IoT)	Augmented Reality (AR)	Computer Aided Design (CAD)	Product Lifecycle Management (PLM)	Industrial Innovation Platform enabling connectivity, rapid application development, and purpose-built solutions	Industrial AR solutions to increase efficiency and technical proficiency of skilled workers in manufacturing and service settings	Effective and collaborative product design across the globe	Efficient and consistent management of product information from concept to retirement across the enterprise processes and distributed teams		Year ended September 30,			2018	2017	2016		(in thousands)			Software Products				Revenue	\$ 1,088,487	\$ 987,316	\$ 943,596
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B.4a	Recent trends	<p>Results for 2018</p> <p>On November 16, 2018, PTC filed with the U.S. Securities and Exchange Commission (the “SEC”) its Annual Report on Form 10-K for the fiscal year ended September 30, 2018 (the “PTC 2018 Form 10-K”). For information about PTC’s financial results, please refer to Element B.7 below.</p> <p>2018 Overview</p> <p>PTC’s revenue results for the year reflect the adoption of subscription licensing by its customers and the compounding effect of the subscription business model as subscription revenue recurs and new subscription revenue is added in the year. Subscription revenue, software revenue and total revenue were all up over fiscal 2017, despite an 800 basis point increase in subscription mix year over year. Recurring software revenue represented approximately 90% of its software revenue in 2018, up from 86% a year ago. Its revenue results also drove its operating margin improvements for the year. Despite increases in sales and marketing and research and development expenses, operating margins and earnings per share were up over the prior year.</p> <p>PTC’s CAD and PLM businesses performed well in the year, its IoT business continued to grow as PTC added new customers and existing customers expanded their implementations, and interest in its augmented reality solutions increased. PTC made important strides in extending its market reach and further differentiating its technology with strategic relationships PTC entered into in 2018, including those with Rockwell Automation, Inc. (“Rockwell Automation”), Microsoft Corporation (“Microsoft”) and ANSYS, Inc. (“ANSYS”). For further information, please</p>																																				

		<p>see Element B.5 below.</p> <p><i>Future Expectations, Strategies and Risks</i></p> <p>PTC's transition to a subscription model has been a headwind for revenue and earnings in 2018 with an increase in its subscription mix of 800 basis points as compared to fiscal 2017. PTC expects a further increase in its subscription mix of 1100 to 1300 basis points, which will result in a further headwind for revenue and earnings in fiscal 2019. PTC expects the effect of the transition to moderate in fiscal 2020. A higher mix of subscription bookings is expected to benefit PTC over the long term, but results in lower revenue and lower earnings in the near term. PTC expects that IoT and AR adoption rates will continue to expand and will be the most significant driver to growth.</p> <p>With the growth opportunity in Industrial IoT and AR, and other strategic initiatives PTC has undertaken, as well as its continued commitment to operating margin improvement, PTC is realigning its workforce in the beginning of 2019 to shift investment to support these strategic, high growth opportunities. This realignment will result in a restructuring charge of approximately \$18 million in 2019, which consists principally of termination benefits, substantially all of which PTC expects will be paid in 2019. As this is a realignment of resources rather than a cost-savings initiative, PTC does not expect this realignment will result in significant cost savings.</p> <p><i>Stock Repurchases and Accelerated Share Repurchase</i></p> <p>PTC's Articles of Organization authorize the Company to issue up to 500 million PTC's shares of common stock having a par value of \$0.01 ("Shares"). PTC's Board of Directors (the "Board") has authorized the Company to repurchase up to \$1,500 million of the Shares for the October 1, 2017 through September 30, 2020 period. PTC intends to use cash from operations and borrowings under its credit facility to make such repurchases. All Shares repurchased are automatically restored to the status of authorized and unissued.</p> <p>In 2018, PTC repurchased 9.4 million Shares. The repurchases were made under two accelerated repurchase ("ASR") agreements. PTC completed the \$100 million ASR repurchase in the third quarter of 2018. PTC entered into a \$1,000 million ASR in July 2018. Shares valued at \$800 million in the aggregate were delivered to PTC upon entry into the ASR. The remaining \$200 million represents the amount held back by the bank counterparty pending final settlement of the ASR, which is expected to occur in the second or third quarter of 2019. Upon settlement of the ASR, the total Shares repurchased by PTC will equal \$1,000 million divided by the average daily volume weighted-average price of the Shares during the term of the ASR program less a fixed per Share discount. PTC used the \$1 billion in proceeds from the Rockwell Automation equity investment in PTC and \$100 million of cash from operations to make the repurchases.</p> <p><i>Credit Facility</i></p> <p>PTC maintains a multi-currency credit facility with a syndicate of sixteen</p>
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		<p>banks for which JPMorgan Chase Bank, N.A. acts as Administrative Agent. PTC uses the credit facility for general corporate purposes, including acquisitions of businesses, share repurchases and working capital requirements. As of September 30, 2018, the fair value of its credit facility approximates its book value.</p> <p>In September 2018, PTC amended and restated the credit facility to increase the revolving loan commitment from \$600 million to \$700 million and amend other provisions, including replacing the fixed charge coverage ratio with an interest coverage ratio. The revolving loan commitment does not require amortization of principal and may be repaid in whole or in part prior to the scheduled maturity date at its option without penalty or premium. The credit facility matures on September 13, 2023, when all remaining amounts outstanding will be due and payable in full.</p> <p>PTC and certain eligible foreign subsidiaries are eligible borrowers under the credit facility.</p> <p>In November 2018, PTC borrowed \$80 million under its credit facility to fund working capital requirements, including 2018 year end incentive-based compensation accruals.</p> <p><i>Restricted Stock Unit Grants</i></p> <p>In October and November 2018, PTC granted restricted stock units (“RSUs”) valued at approximately \$73.5 million to employees, including \$31.9 million target value of performance-based RSUs, of which \$31.7 million was granted to its executives, and \$41.6 million of time-based RSUs granted to employees and executives.</p> <p>Substantially all of the executive performance-based RSUs are eligible to vest based upon annual performance measures. To the extent earned, these units will vest in three substantially equal installments on the later of November 15, 2019, 2020 and 2021, or the date the Compensation Committee (the “Committee”) of the Board determines the extent to which the applicable performance criteria have been achieved for each performance period. RSUs not earned for a period may be earned in the third period. The performance-based RSUs allow for upside based on 2019, 2020 and 2021 performance measures, and provide the opportunity to earn up one times to the number of performance-based RSUs (up to a maximum of 146,000 Shares) if certain performance conditions are met.</p> <p>The time-based RSUs will vest in three substantially equal annual installments on November 15, 2019, 2020 and 2021. The time-based RSUs granted to PTC’s executives allow for upside based on a 2019 performance measure. Executives have the opportunity to earn up to one times or, for its Chief Executive Officer, two times the number of time-based RSUs granted (up to a maximum of 197,000 shares) if the upside performance measure is achieved. Any upside RSUs earned will vest in three substantially equal installments at the same time as the base RSUs.</p>
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		<p>Acquisition</p> <p>On November 19, 2018, PTC Inc. acquired Frustum Inc., a Delaware corporation based in Colorado, for approximately \$70,000,000 in cash, net Frustum's debt. PTC drew on its credit facility to fund the acquisition. Frustum is engaged in next-generation computer-aided design, including generative design – an approach that leverages artificial intelligence to generate design options.</p>																
B.5	Organizational structure	<p>PTC is the parent company of the PTC group. PTC, directly or indirectly, owns 100% of capital and voting rights of each of its subsidiaries. As of the filing of the PTC 2018 Form 10-K, PTC had 47 subsidiaries.</p> <p>Strategic Partners</p> <p>In 2018, PTC entered into the three strategic partner relationships below to jointly develop, market and sell integrated products and services.</p> <p>PTC partnered with Rockwell Automation to align its respective smart factory technologies to address the market for smart, connected operations, with particular focus on the plant and factory setting. During the term of the contract, Rockwell Automation has exclusive rights to resell certain of its solutions to certain customers and geographic regions. In connection with this strategic alliance, Rockwell Automation made a \$1 billion equity investment in PTC, by acquiring 10,582,010 Shares at a price of \$94.50 per Share.</p> <p>PTC partnered with Microsoft to make the ThingWorx[®] Industrial Innovation Platform available on the Microsoft Azure cloud platform as its preferred cloud platform.</p> <p>PTC partnered with ANSYS to enable the Company to embed Ansys' Discovery Live real-time simulation within Creo, enabling PTC to offer a fully-integrated CAD and real-time simulation solution.</p>																
B.6	Interests in PTC's capital or voting rights	Not applicable. Pursuant to its Q&A, ESMA considers that Item 18 of Annex I of the Prospectus Regulation is generally not pertinent for offers of shares to employees and can thus be omitted from the prospectus in accordance with Article 23.4 of the Prospectus Regulation.																
B.7	Financial information concerning PTC for the fiscal years ended September 30, 2018, 2017 and 2016																	
<p>The selected financial data of PTC set out in this prospectus are derived from PTC's consolidated financial statements and have been prepared in accordance with generally accepted accounting principles basis in the United States of America ("U.S. GAAP").</p> <p style="text-align: center;">THREE-YEAR SUMMARY OF SELECTED FINANCIAL DATA (1) (in thousands, except per share data)</p> <table border="1"> <thead> <tr> <th></th> <th style="text-align: center;">2018</th> <th style="text-align: center;">2017</th> <th style="text-align: center;">2016</th> </tr> </thead> <tbody> <tr> <td>Revenue</td> <td style="text-align: right;">\$ 1,241,824</td> <td style="text-align: right;">\$ 1,164,039</td> <td style="text-align: right;">\$ 1,140,533</td> </tr> <tr> <td>Gross margin</td> <td style="text-align: right;">915,630</td> <td style="text-align: right;">835,020</td> <td style="text-align: right;">814,868</td> </tr> <tr> <td>Operating income (loss) (2)</td> <td style="text-align: right;">73,237</td> <td style="text-align: right;">40,898</td> <td style="text-align: right;">(37,014)</td> </tr> </tbody> </table>				2018	2017	2016	Revenue	\$ 1,241,824	\$ 1,164,039	\$ 1,140,533	Gross margin	915,630	835,020	814,868	Operating income (loss) (2)	73,237	40,898	(37,014)
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Revenue	\$ 1,241,824	\$ 1,164,039	\$ 1,140,533															
Gross margin	915,630	835,020	814,868															
Operating income (loss) (2)	73,237	40,898	(37,014)															

Net income (loss) (2)	51,987	6,239	(54,465)
Earnings (loss) per share—Basic (2)	0.45	0.05	(0.48)
Earnings (loss) per share—Diluted (2)	0.44	0.05	(0.48)
Total assets	2,329,022	2,360,384	2,345,729
Working capital	(101,495)	(12,353)	(11,930)
Long-term liabilities	719,154	796,039	848,544
Stockholders' equity	874,589	885,436	842,666

(1) The consolidated financial position and results of operations data reflect PTC's acquisitions of Kepware on January 12, 2016 for \$99.4 million in cash as well as certain other less significant businesses during these periods. Results of operations for the acquired businesses have been included in the Consolidated Statements of Operations included in the PTC 2018 Form 10-K since their acquisition dates.

(2) Operating income (loss) and net income (loss) in 2016 includes pre-tax restructuring charges of \$76.3 million.

B.8	Pro forma financial information	Not applicable. Pursuant to its Q&A, ESMA considers that Item 20.2 of Annex I of the Prospectus Regulation is generally not pertinent for offers of shares to employees and can thus be omitted from the prospectus in accordance with Article 23.4 of the Prospectus Regulation.
B.9	Profit forecast or estimate	Not applicable. This prospectus does not contain any profit forecast or estimate.
B.10	Qualifications in the audit report on the historical financial information	Not applicable. There are no such qualifications in the auditors' reports for fiscal years 2018, 2017 or 2016.
B.11	Working capital statement	Not applicable. PTC's working capital is sufficient for its present requirements.

SECTION C — SECURITIES

C.1	Type and class of the securities being offered, including the security identification code	<p>The Shares offered pursuant to this prospectus are authorized but unissued Shares.</p> <p>The Shares are or will be, after their issuance, listed on the Nasdaq Global Select Market ("Nasdaq") under the symbol "PTC." The CUSIP number for the Shares is 69370C100.</p> <p>The Shares issued under the ESPP are tradable on Nasdaq and provide to the Participants (as defined in Element C.4 below) the same rights as those attached to the Shares currently traded on Nasdaq.</p>
C.2	Currency of the securities issue	The United States Dollar is the currency of the securities issue.

C.3	Number of shares issued	As of September 30, 2018, PTC was authorized to issue 500,000,000 Shares, and 5,000,000 shares of preferred stock, par value \$0.01. As of November 15, 2018, there were 118,675,240 Shares outstanding, and no shares of preferred stock were issued and outstanding. 0.5 million of the preferred stock are designated as Series A Junior Participating Preferred Stock. The Board is authorized to fix the rights and terms for any series of preferred stock without additional stockholder approval.
C.4	Rights attached to the securities	<p>Eligible employees who enroll and participate in the ESPP are referred to as the “Participants.”</p> <p>No Participant shall have any voting, dividend, or other stockholder rights with respect to any offering under the ESPP until the Shares have been purchased and delivered to the Participant. Following such purchase and delivery, the Participant shall be entitled to the rights attached to the Shares, as further described below:</p> <p>Dividend Rights. Dividends may be declared and paid on the Shares from funds lawfully available therefor as and when determined by the Board and subject to any preferential dividend rights of any then outstanding preferred stock.</p> <p>Voting Rights. Holders of the Shares are entitled to one vote for each share held at all meetings of stockholders (and written actions in lieu of meetings). There shall be no cumulative voting.</p> <p>Right to Receive Liquidation Distributions. Upon the dissolution or liquidation of PTC, whether voluntary or involuntary, holders of Shares will be entitled to receive all assets of PTC available for distribution to its stockholders, subject to any preferential rights of any then outstanding preferred stock.</p> <p>No Preemptive, Redemptive or Conversion Provisions. The Shares are not entitled to preemptive rights and are not subject to conversion or redemption.</p>
C.5	Transferability restrictions	Not applicable. The Shares in this offering are registered on Form S-8 with the SEC and are generally freely transferable.
C.6	Admission to trading on a regulated market	Not applicable. As noted in Element C.1 above, the Shares are listed on Nasdaq.
C.7	Dividend policy	PTC does not pay cash dividends on the Shares and PTC retains earnings for use in its business or to repurchase the Shares. Although PTC reviews its dividend policy periodically, its review may not cause PTC to pay any dividends in the future. Further, PTC’s debt instruments require PTC to maintain specified leverage and fixed-charge ratios that limit the amount of dividends that it could pay.

SECTION D — RISKS		
D.1	Key risks related to PTC or its industry	<p>Set forth below are summaries of the key risks, uncertainties and other factors that may affect PTC's future results. The risks and uncertainties described below are not the only ones facing PTC.</p> <ul style="list-style-type: none"> • PTC now offers its solutions as subscriptions, which has adversely affected, and may continue to adversely affect, its revenue and earnings in the transition period and make predicting its revenue and earnings more difficult. • PTC's significant investment in its IoT business may not generate the revenues PTC expects, which could adversely affect its business and financial results. • PTC depends on sales within the discrete manufacturing sector and its business could be adversely affected if manufacturing activity does not grow or if it contracts or if manufacturers are adversely affected by other economic factors. • PTC faces significant competition, which may reduce its profits and limit or reduce its market share. • A breach of security in PTC's products or computer systems, or those of its third-party service providers, could compromise the integrity of its products, harm its reputation, create additional liability and adversely impact its financial results. • PTC's sales and operations are globally dispersed, which exposes PTC to additional compliance risks, which could adversely affect its business and financial results. • PTC's inability to maintain or develop its strategic and technology relationships could adversely affect its business. • Intellectual property infringement claims could be asserted against PTC, which could be expensive to defend and could result in limitations on its use of the claimed intellectual property. • On September 7, 2017, PTC entered into a lease for a new worldwide headquarters in the Boston Seaport District, beginning in January 2019. Because its current headquarters lease will not expire until November 2022, PTC is seeking to exit its current headquarters lease or sublease that space, but have not yet done so. If PTC is unable to do so, or unable to do so for an amount at least equal to its rent obligations under the current headquarters lease, PTC will bear overlapping rent obligations for those premises and will be required to record a charge related to any rent shortfall, which could adversely affect its financial condition. • PTC's substantial indebtedness could adversely affect its business, financial condition and results of operations, as well as its ability to meet its payment obligations under its debt.

<p>D.3</p>	<p>Key risks related to the shares</p>	<ul style="list-style-type: none"> • PTC may be unable to meet its goal of returning 40% of free cash flow to shareholders through share repurchases, which could decrease shareholders' expected return on investment in PTC stock. • PTC's stock price has been volatile, which may make it harder to resell the Shares at a time and at a price that is favorable to the stockholders. • Participants assume the risk of any currency and/or market fluctuations from the time of their contributions to the ESPP by payroll deductions through the selling of their Shares.
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<p style="text-align: center;">SECTION E — OFFER</p>		
<p>E.1</p>	<p>Net proceeds</p>	<p>Assuming that each of the 1,032 eligible employees² in France, Germany, Romania and the United Kingdom, would purchase the maximum amount of Shares under the ESPP offered pursuant to this prospectus, that is, a total of 588 Shares each, for a maximum of \$42,433.02 in contributions per person, at \$72.165 (85% of a hypothetical Share price of \$84.90 which was the closing price of the Shares on November 27, 2018), and assuming that the Shares offered under the ESPP would all be newly issued, then the gross proceeds to PTC in connection with the offer under the ESPP pursuant to this prospectus would be \$43,790,876.64. After deducting approximately \$100,000 in legal and accounting expenses in connection with the offer, the net proceeds would be approximately \$43,690,876.64.</p>
<p>E.2a</p>	<p>Reasons for the offer and use of proceeds</p>	<p>The purpose of the ESPP is to provide a method for eligible employees of PTC and designated subsidiaries who wish to become stockholders of PTC an opportunity to purchase Shares at a discount through regular payroll deductions, subject to ESPP limitations.</p> <p>The net proceeds will be used for general corporate purposes.</p>
<p>E.3</p>	<p>Description of the terms and conditions of the offer</p>	<p>The ESPP was approved by Board on January 8, 2016 and the stockholders at the 2016 annual meeting of stockholders held on March 2, 2016. PTC offers eligible employees of PTC and certain of its designated subsidiaries residing in the EEA the right to purchase Shares under the ESPP. The ESPP is administered through the Committee.</p> <p>The offering of the ESPP may be considered a public offering of securities pursuant to Prospectus Directive in the following EEA countries, subject to the applicable legislation in each country: France, Germany, Romania and the United Kingdom. The offering of the ESPP may also be made in the following EEA countries: Austria, Belgium, Finland, Ireland, Italy, the Netherlands, Spain, and Sweden. However, such offering is not considered a public offering of securities and/or the obligation to publish a prospectus does not apply to the offering of securities under the legislation implementing the Prospectus Directive in</p>

² As of November 20, 2018, there were 212 eligible employees in France, 439 eligible employees in Germany, 227 eligible employees in Romania and 154 eligible employees in the United Kingdom.

		<p>such countries.</p> <p>The prospectus will be made available in printed form to employees of the subsidiaries of PTC based in France, Germany, Romania and the United Kingdom where the offering of the ESPP may be considered a public offering of securities at the respective head offices of their employers.</p> <p>The ESPP is offered in two sequential 6-month offering periods (“Offering Periods”) per year. Generally, eligible employees may elect to participate in the ESPP by enrolling electronically online through an election tool during a specified two-week period during the month prior to the beginning of an Offering Period. Offering Periods commence on February 1 and August 1 of each year (each an “Offering Date”), and end on July 31 and January 31, respectively, or on such other dates as the Committee shall determine. The open enrollment periods for the Offering Periods commencing February 1, 2019 and August 1, 2019 shall be on or about January 7, 2019 through January 18, 2019, and on or about July 8, 2019 through July 19, 2019, respectively.</p> <p>As part of the online enrollment process, a Participant may choose to have any whole percentage from 1% to 10% of his/her base salary deducted from each pay period. Once enrolled, Participants may purchase Shares at a discount under the ESPP. On the last day of each Offering Period, which shall be July 31 for the Offering Period commencing February 1 and January 31 for the Offering Period commencing August 1 (each, a “Purchase Date”), Participants’ accumulated payroll deductions will be used to purchase Shares at a price equal to 85% of the lesser of (1) the Fair Market Value of a Share on the Offering Date and (2) the Fair Market Value of a Share on the Purchase Date. The “Fair Market Value” of a Share for purposes of the ESPP is the closing sale price of a Share on Nasdaq on the applicable date.</p> <p>The maximum number of Shares that a Participant may purchase under the ESPP on any Purchase Date in an Offering Period shall not exceed \$25,000 worth of Shares in any one calendar year, measured by the Fair Market Value of the Shares on the Offering Date. In addition, a Participant may not purchase more than 1,500 Shares in any Offering Period.</p> <p>Provided that a Participant remains an eligible employee, such Participant’s participation in the ESPP and payroll deduction elections will continue for subsequent Offering Periods unless such Participant withdraws from the ESPP. A Participant may not change the amount of his/her contributions during an Offering Period. A Participant may, however, increase or decrease his/her rate of payroll deductions for the next Offering Period. In each case, a Participant may change the rate of his/her payroll deductions through the online election tool. In addition, a Participant may withdraw from the ESPP using the online election tool and receive a refund of all payroll deductions not yet used for the purchase of Shares at any time prior to 18 days before the end of the Offering Period, or such other date as the Committee may establish.</p> <p>There is no charge to Participants for the acquisition or holding of Shares</p>
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		<p>under the ESPP.</p> <p>The total number of Shares authorized and reserved for issuance under the ESPP is 2,000,000 Shares. As of November 30, 2018, there were 1,439,069 Shares available for issuance under the ESPP on a worldwide basis.</p>									
E.4	Description of material interest to the offer including conflict of interests	Not applicable. There are no such interests.									
E.5	Name of the entity offering to sell the security	PTC Inc.									
E.6	Maximum dilution	<p>Assuming that the Shares offered under the ESPP pursuant to this prospectus to the 1,032 eligible employees in France, Germany, Romania and the United Kingdom would all be newly issued, the holdings of a stockholder of PTC currently holding 1% of the total outstanding share capital of PTC as of November 15, 2018, that is 1,186,752 Shares, and who is not an eligible employee participating in the offer would be diluted as indicated in the following table:</p> <table border="1"> <thead> <tr> <th></th> <th>Percentage of the total outstanding Shares</th> <th>Total number of outstanding Shares</th> </tr> </thead> <tbody> <tr> <td>Before the offering (as of November 15, 2018)</td> <td>1.00%</td> <td>118,675,240</td> </tr> <tr> <td>After issuance of 606,816 Shares under the ESPP</td> <td>.995%</td> <td>119,282,056</td> </tr> </tbody> </table>		Percentage of the total outstanding Shares	Total number of outstanding Shares	Before the offering (as of November 15, 2018)	1.00%	118,675,240	After issuance of 606,816 Shares under the ESPP	.995%	119,282,056
	Percentage of the total outstanding Shares	Total number of outstanding Shares									
Before the offering (as of November 15, 2018)	1.00%	118,675,240									
After issuance of 606,816 Shares under the ESPP	.995%	119,282,056									
E.7	Estimated expenses charged to the investor	Not applicable. There are no such expenses.									

PART II — PROSPECTUS

SECTION A — RISK FACTORS

The following are important factors we have identified that could affect our future results. You should consider them carefully when evaluating an investment in PTC securities or any forward-looking statements made by us, including those contained in this prospectus, because these factors could cause actual results to differ materially from historical results or the performance projected in forward-looking statements. The risks described below are not the only risks we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also materially adversely affect our business, financial condition and/or operating results.

I. OPERATIONAL CONSIDERATIONS

Our operating results fluctuate from quarter to quarter, making future operating results difficult to predict; failure to meet market expectations could cause the price of our securities to decline.

Our quarterly operating results historically have fluctuated and are likely to continue to fluctuate depending on a number of factors, including:

- a high percentage of our orders historically have been generated in the third month of each fiscal quarter and any failure to receive, complete or process orders at the end of any quarter could cause us to fall short of our revenue and bookings targets;
- our adoption of Accounting Standards Update 2014-09, *Revenue from Contracts with Customers: Topic 606* in 2019 will create significant quarterly revenue volatility;
- a significant percentage of our orders comes from transactions with large customers, which tend to have long lead times that are less predictable;
- our mix of license, subscription and service revenues can vary from quarter to quarter, creating variability in our financial results;
- one or more industries that we serve may have weak or negative growth;
- our operating expenses are largely fixed in the short term and are based on expected revenues, so any failure to achieve our revenue targets could cause us to miss our earnings targets as well;
- because a significant portion of our revenue and expenses are generated from outside the U.S., shifts in foreign currency exchange rates could adversely affect our reported results; and
- we may incur significant expenses in a quarter in connection with corporate development initiatives, restructuring efforts or the investigation, defense or settlement of legal actions that would increase our operating expenses and reduce our earnings for the quarter in which those expenses are incurred.

Accordingly, our quarterly results are difficult to predict prior to the end of the quarter and we may be unable to confirm or adjust expectations with respect to our operating results for a particular quarter until that quarter has closed. Any failure to meet our quarterly revenue or earnings targets could adversely impact the market price of our securities.

We now offer our solutions as subscriptions, which has adversely affected, and may continue to adversely affect, our revenue and earnings in the transition period and make predicting our revenue and earnings more difficult.

We began offering most of our solutions under a subscription option in 2015, in addition to a perpetual license option. Under a subscription, customers pay a periodic fee for the right to use our software and receive support, or to use our cloud services and have us manage the application for a specified period. Through 2018, under a subscription, revenue is recognized ratably over the term of the subscription while under a perpetual license, revenue is generally recognized upon purchase. A significant number of our customers have elected to purchase our solutions as subscriptions rather than under perpetual licenses. As a result, our license revenues have declined. Our support revenue (which comprises a significant portion of our revenue) has also decreased due to support services being included in the subscription offering and to customers converting their support contracts into subscriptions. We discontinued sales of perpetual licenses for most of our products in the Americas and Western Europe as of January 1, 2018 and intend to discontinue sales of such perpetual licenses in all remaining geographic regions as of January 2019, which will likely accelerate these effects on our revenue. As described in Management's Discussion and Analysis of Financial Condition and Results of Operations, *Revenue Sources and Recognition*, and in *Note B. Summary of Significant Accounting Policies* in the Notes to Consolidated Financial Statements included in the PTC 2018 Form 10-K, we adopted ASC 606 effective October 1, 2018, which will change how we account for revenue transactions and will affect the timing of our revenue period to period.

We may not be able to predict subscription renewal rates and their impact on our future revenue and operating results.

Although our subscription solutions are designed to increase the number of customers that purchase our solutions as subscriptions and create a recurring revenue stream that increases and is more predictable over time, our customers are not required to renew their subscriptions for our solutions and they may elect not to renew when or as we expect. Customer renewal rates may decline or fluctuate due to a number of factors, including offering pricing, competitive offerings, customer satisfaction, and reductions in customer spending levels or customer activity due to economic downturns, the adverse impact of import tariffs, or other market uncertainty. If our customers do not renew their subscriptions when or as we expect, or if they renew on less favorable terms, our revenues and earnings may decline.

Our long range financial targets are predicated on bookings and revenue growth and operating margin improvements that we may fail to achieve, which could reduce our expected earnings and cause us to fail to meet the expectations of analysts or investors and cause the price of our securities to decline.

We are projecting long-term bookings, revenue and earnings growth. Our projections are based on the expected growth potential in the IoT and AR markets, as well as more modest growth in our core CAD and PLM markets. We may not achieve the expected bookings and revenue growth if the markets we serve do not grow at expected rates, if customers do not purchase, renew, or expand subscriptions as we expect, if we are not able to deliver solutions desired by customers and potential customers, and/or if acquired businesses do not generate the revenue growth that we expect.

Our long-term operating margin improvement targets are predicated on operating leverage as long-range revenue increases and on improved operating efficiencies, particularly within our sales organization, and on service margin improvements. Services margins are significantly lower than license and support margins. Future projected improvements in our operating margin as a percent of revenue are based in part on our ability to improve services margins by reducing the amount of direct services that we perform through expansion of our service partner program and improving the profitability of services that we perform. If our services revenue increases as a percentage of total revenue and/or if we are unable to improve our services margins, our overall operating margin may not increase to the levels we expect or may decrease. Additionally, if we do not achieve lower sales and marketing expenses as a percentage of revenue through productivity initiatives, we may not achieve our operating margin targets. If operating

margins do not improve, our earnings could be adversely affected and the price of our securities could decline.

Our significant investment in our IoT business may not generate the revenues we expect, which could adversely affect our business and financial results.

We have made significant investments in recent years in our IoT business, including acquisitions totaling approximately \$550 million.

The IoT is a relatively new market and there are a significant number of competitors in the market. If the market does not expand as rapidly as we or others expect or if customers adopt competitive solutions rather than our solutions, our IoT business may not generate the revenues we expect. Further, our customers and potential customers often begin the process of implementing IoT with a proof-of-concept evaluation, in some cases with multiple different technology vendors. Our success in this emerging market will depend on our ability to engage with customers to ensure that their investment moves beyond planning to broader deployment and yields value at their desired speed and expected costs.

Further, one market for our IoT business is as a platform provider to a broad ecosystem of application and solutions providers. This market relies on an extensive and differentiated partner ecosystem to enable us to access markets and customers beyond our traditional markets, customers and buyers. We may be unable to expand our partner ecosystem as we expect and developers may not adopt our IoT solutions as we expect, which would adversely affect our ability to realize revenue from our investments in this business.

We depend on sales within the discrete manufacturing sector and our business could be adversely affected if manufacturing activity does not grow or if it contracts or if manufacturers are adversely affected by other economic factors.

A large amount of our sales are to customers in the discrete manufacturing sector. If this economic sector does not grow, or if it contracts, our customers in this sector may, as they have in the past, reduce or defer purchases of our products and services, which adversely affects our business. Further, U.S. manufacturers have been adversely affected by tariffs recently imposed on certain imported goods, which could cause them to reduce their purchases of our software, which would adversely affect our revenue and earnings.

Changes in accounting principles and guidance, or their interpretation or implementation, may materially adversely affect our reported results of operations or financial position.

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the U.S. These principles are subject to interpretation by the U.S. Securities and Exchange Commission and various bodies formed to create and interpret appropriate accounting principles and guidance. A change in these principles or guidance, or in their interpretations, may have a significant effect on our reported results, as well as our processes and related controls.

For example, in May 2014, the Financial Accounting Standards Board issued Accounting Standards Update 2014-09, *Revenue from Contracts with Customers: Topic 606* (ASC 606). This new standard is both technical and complex. ASC 606 became effective for us on October 1, 2018. We are adopting ASC 606 using the modified retrospective transition method. The adoption of this new standard will have a material impact on our consolidated financial statements, including the way we account for arrangements involving our term-based subscription licenses, deferred revenue and sales commissions. In connection with the adoption of ASC 606, we are implementing new processes, systems and internal controls. Such changes and any difficulties implementing such changes could materially adversely affect our reported financial results, our ability to comply with regulatory reporting requirements, and the effectiveness of our internal controls over financial reporting.

For a discussion of the potential impact that the implementation of ASC 606 is expected to have on our consolidated financial statements and related disclosures, see *Note B, Summary of Significant Accounting Policies* in the Notes to Consolidated Financial Statements included in the PTC 2018 Form 10-K.

We face significant competition, which may reduce our profits and limit or reduce our market share.

The market for product development solutions and IoT solutions is rapidly changing and is characterized by vigorous competition, both by entry of competitors with innovative technologies and by consolidation of companies with complementary products and technologies. This competition could result in price reductions for our products and services, reduced margins, loss of customers and loss of market share. Our primary competition comes from:

- larger companies that offer competitive solutions;
- larger, more well-known enterprise software providers with less product overlap, but greater financial, technical, sales and marketing, and other resources; and
- other vendors of various competitive point solutions or IoT platforms.

In addition, barriers to entry into certain segments of the software industry have declined and the ability of customers to adopt software solutions has increased with the ability to offer software in the cloud and the increasing prevalence of subscription license models and customer acceptance of both those models. Because of these and other factors, competitive conditions in the industry are likely to intensify in the future.

Increased competition could result in price reductions, reduced revenue and profit margin and loss of market share, any of which would likely harm our business.

A breach of security in our products or computer systems, or those of our third-party service providers, could compromise the integrity of our products, harm our reputation, create additional liability and adversely impact our financial results.

We have implemented and continue to implement measures intended to maintain the security and integrity of our products, source code and computer systems. The potential consequences of a security breach or system disruption (particularly through cyber-attack or cyber-intrusion, including by computer hackers, foreign governments and cyber terrorists) have increased in scope as the number, intensity and sophistication of attempted attacks and intrusions from around the world have increased. Despite efforts to create security barriers to such threats, it is impossible for us to eliminate this risk, and, in fact, we deal with security issues on a regular basis and have experienced security incidents from time to time. Accordingly, there is a risk that we might encounter a material event or issue and that such an event or issue may occur. In addition, we offer cloud services to our customers and some of our products are hosted by third-party service providers, which expose us to additional risks as those repositories of our customers' proprietary data may be targeted by such hackers. A significant breach of the security and/or integrity of our products or systems, or those of our third-party service providers, could prevent our products from functioning properly, could enable access to sensitive, proprietary or confidential information, including that of our customers, or could disrupt our business operations or those of our customers. This could require us to incur significant costs of investigation, remediation, harm our reputation, cause customers to stop buying our products, and cause us to face lawsuits and potential liability, which could have a material adverse effect on our financial condition and results of operations.

We may be unable to hire or retain personnel with the technical skills necessary to further develop our software products, which could adversely affect our ability to compete.

Our success depends upon our ability to attract and retain highly skilled technical personnel to develop our products. Competition for such personnel in our industry is intense, especially for personnel with augmented and virtual reality and analytics expertise as there are comparatively fewer persons with those skills. If we are unable to attract and retain technical personnel with the requisite skills, our product development efforts could be delayed, which could adversely affect our ability to compete and thereby adversely affect our revenues and profitability.

Our sales and operations are globally dispersed, which exposes us to additional compliance risks, which could adversely affect our business and financial results.

We sell and deliver software and services, and maintain support operations, in a large number of countries whose laws and practices differ from one another and are subject to unexpected changes. Managing these geographically dispersed operations requires significant attention and resources to ensure compliance with laws of those countries and those of the U.S. governing our activities in non-U.S. countries.

Those laws include, but are not limited to, anti-corruption laws and regulations (including the U.S. Foreign Corrupt Practices Act (“FCPA”) and the U.K. Bribery Act 2010), data privacy laws and regulations (including the European Union’s General Data Privacy Regulation), and trade and economic sanctions laws and regulations (including laws administered by the U.S. Department of the Treasury’s Office of Foreign Assets Control, the U.S. State Department, the U.S. Department of Commerce, the United Nations Security Council and other relevant sanctions authorities). The FCPA and UK Bribery Act prohibit us and business partners or agents acting on our behalf from offering or providing anything of value to persons considered to be foreign officials under those laws for the purposes of obtaining or retaining business. The UK Bribery Act also prohibits commercial bribery and accepting bribes. Our compliance risks with these laws are heightened due to the global nature of our business, our go-to-market approach for our IoT business that relies heavily on expanding our partner ecosystem, the fact that we operate in, and are expanding into, countries with a higher incidence of corruption and fraudulent business practices than others, the fact that we deal with governments and state-owned business enterprises, the employees and representatives of which may be considered foreign officials for purposes of the FCPA and the UK Bribery Act, and the fact global enforcement of anti-corruption laws, data privacy laws, and other laws has significantly increased.

Accordingly, while we strive to maintain a comprehensive compliance program, we cannot guarantee that an employee, agent or business partner will not act in violation of our policies or U.S. or other applicable laws or that we may inadvertently violate such laws. Investigations of alleged violations of those laws can be expensive and disruptive. Violations of such laws can lead to civil and/or criminal prosecutions, substantial fines and other sanctions, including the revocation of our rights to continue certain operations, and also cause business and reputation loss, which could adversely affect our financial results and/or stock price.

Our international businesses present economic and operating risks, which could adversely affect our business and financial results.

We expect that our international operations will continue to expand and to account for a significant portion of our total revenue. Because we transact business in various foreign currencies, the volatility of foreign exchange rates has had and may in the future have a material adverse effect on our revenue, expenses and operating results.

Other risks inherent in our international operations include, but are not limited to, the following:

- difficulties in staffing and managing foreign sales and development operations;

- possible future limitations upon foreign-owned businesses;
- increased financial accounting and reporting burdens and complexities;
- inadequate local infrastructure; and
- greater difficulty in protecting our intellectual property.

Our inability to maintain or develop our strategic and technology relationships could adversely affect our business.

We have many strategic and technology relationships with other companies with which we work to offer complementary solutions and services, that market and sell our solutions, and that provide technologies that we embed in our solutions. We may not realize the expected benefits from these relationships and such relationships may be terminated by the other party. If these companies fail to perform or if a company terminates or substantially alters the terms of the relationship, we could suffer delays in product development, reduced sales or other operational difficulties and our business, results of operations and financial condition could be materially adversely affected.

We may be unable to adequately protect our proprietary rights, which could adversely affect our business and our ability to compete effectively.

Our software products are proprietary. We protect our intellectual property rights in these items by relying on copyrights, trademarks, patents and common law safeguards, including trade secret protection, as well as restrictions on disclosures and transferability contained in our agreements with other parties. Despite these measures, the laws of all relevant jurisdictions may not afford adequate protection to our products and other intellectual property. In addition, we frequently encounter attempts by individuals and companies to pirate our software. If our measures to protect our intellectual property rights fail, others may be able to use those rights, which could reduce our competitiveness and revenues.

In addition, any legal action to protect our intellectual property rights that we may bring or be engaged in could be costly, may distract management from day-to-day operations and may lead to additional claims against us, and we may not succeed, all of which would materially adversely affect our operating results.

Intellectual property infringement claims could be asserted against us, which could be expensive to defend and could result in limitations on our use of the claimed intellectual property.

The software industry is characterized by frequent litigation regarding copyright, patent and other intellectual property rights, as well as improper disclosure of confidential or proprietary information. If a lawsuit of this type is filed, it could result in significant expense to us and divert the efforts of our technical and management personnel. We cannot be sure that we would prevail against any such asserted claims. If we did not prevail, we could be prevented from using the claimed intellectual property or be required to enter into royalty or licensing agreements, which might not be available on terms acceptable to us. In addition to possible claims with respect to our proprietary products, some of our products contain technology developed by and licensed from third parties and we may likewise be susceptible to infringement claims with respect to these third-party technologies.

Businesses we acquire may not generate the revenue and earnings we anticipate and may otherwise adversely affect our business.

We have acquired, and intend to continue to acquire, new businesses and technologies. If we fail to successfully integrate and manage the businesses and technologies we acquire, or if an acquisition does not further our business strategy as we expect, our operating results will be adversely affected.

Moreover, business combinations involve a number of risks and uncertainties that can adversely affect our operations and operating results, including:

- difficulties managing an acquired company's technologies or lines of business or entering new markets where we have limited or no prior experience or where competitors may have stronger market positions;
- unanticipated operating difficulties in connection with the acquired entities, including potential declines in revenue of the acquired entity;
- failure to achieve the expected return on our investments, which could adversely affect our business or operating results and impair the assets that we recorded as a part of an acquisition, including intangible assets and goodwill;
- diversion of management and employee attention;
- loss of key personnel;
- assumption of unanticipated legal or financial liabilities or other unidentified issues with the acquired business;
- potential incompatibility of business cultures;
- significant increases in our interest expense, leverage and debt service requirements if we incur additional debt to pay for an acquisition; and
- if we were to issue a significant amount of equity securities in connection with future acquisitions, existing stockholders would be diluted and earnings per share would likely decrease.

Our financial condition could be adversely affected if significant errors or defects are found in our software.

Sophisticated software can sometimes contain errors, defects, security vulnerabilities or other performance problems. If such items are discovered in our products, we may need to expend significant financial, technical and management resources, or divert some of our development resources, in order to resolve or work around those items, and we may not be able to correct them in a timely manner or provide an adequate response to our customers.

Errors, defects, security vulnerabilities or other performance problems in our products could also cause us to lose revenue, lose customers and lose market share, and could subject us to liability. Such items could also damage our business reputation and cause us to lose new business opportunities.

We may have exposure to additional tax liabilities and our effective tax rate may increase or fluctuate, which could increase our income tax expense and reduce our net income.

As a multinational organization, we are subject to income taxes as well as non-income based taxes in the U.S. and in various foreign jurisdictions. Significant judgment is required in determining our worldwide income tax provision and other tax liabilities. In the ordinary course of a global business, there are many intercompany transactions and calculations where the ultimate tax determination is uncertain. Our tax returns are subject to review by various taxing authorities. Although we believe that our tax estimates are reasonable, the final determination of tax audits or tax disputes could be different from what is reflected in our historical income tax provisions and accruals.

Our effective tax rate can be adversely affected by several factors, many of which are outside of our control, including:

- changes in tax laws, regulations, and interpretations in multiple jurisdictions in which we operate;
- assessments, and any related tax interest or penalties, by taxing authorities;
- changes in the relative proportions of revenues and income before taxes in the various jurisdictions in which we operate that have differing statutory tax rates;
- changes to the financial accounting rules for income taxes;
- unanticipated changes in tax rates; and
- changes to a valuation allowance on net deferred tax assets, if any.

On September 7, 2017, we entered into a lease for a new worldwide headquarters in the Boston Seaport District, beginning in January 2019. Because our current headquarters lease will not expire until November 2022, we are seeking to exit our current headquarters lease or sublease that space, but have not yet done so. If we are unable to do so, or unable to do so for an amount at least equal to our rent obligations under the current headquarters lease, we will bear overlapping rent obligations for those premises and will be required to record a charge related to any rent shortfall, which could adversely affect our financial condition.

Under our current headquarters lease, we pay approximately \$7.4 million in annual base rent plus operating expenses (together “rent obligations,” an aggregate annual total of approximately \$12.0 million). We will begin paying rent under our new headquarters lease on July 1, 2020. Our rent under the new lease when we begin paying rent will be an annual base rent amount of \$11.3 million plus our pro rata portions of building operating expenses and real estate taxes (approximately 63% of such amounts, estimated to be approximately \$7.1 million in 2020). The base rent will increase by \$0.3 million each year over the term of the lease. Accordingly, we will be required to pay rent for both locations from July 1, 2020 until November 30, 2022 unless we can successfully negotiate an exit to our current lease or sublease our current premises. We may be unable to negotiate a financially desirable termination of our current lease or to sublease our current premises for an amount at least equal to our rent obligations under the current lease, which would require us to bear the overlapping rent obligations and to record a charge related to such shortfall, and could adversely affect our cash flow and financial condition. A charge for such shortfall will be recorded in the earlier of the period that we cease using the existing space (which will likely occur in the second quarter of our fiscal 2019) or the period we exit the lease contract.

II. OTHER CONSIDERATIONS

Our substantial indebtedness could adversely affect our business, financial condition and results of operations, as well as our ability to meet our payment obligations under our debt.

We have a significant amount of indebtedness. As of November 15, 2018, our total debt outstanding was approximately \$728 million, approximately \$228 million of which was under our \$700 million secured credit facility (which matures in September 2023) and \$500 million of which was associated with the 6% Senior Notes issued May 2016, which mature in May 2024 and are unsecured (see *Liquidity and Capital Resources-Outstanding Notes* in Item 7. “Management’s Discussion and Analysis of Financial Condition and Results of Operations” included in the PTC 2018 Form 10-K). All amounts outstanding under the credit facility and the notes will be due and payable in full on their respective maturity dates. As of November 15, 2018, we had unused commitments under our credit facility of approximately \$472 million. PTC Inc. (the parent company) and one of our foreign subsidiaries are eligible borrowers under the credit facility and certain other foreign subsidiaries may become borrowers under our credit facility in the future, subject to certain conditions.

Notwithstanding the limits contained in the credit agreement governing our credit facility and the indenture governing our 2024 6% Notes, we may be able to incur substantial additional debt from time to time to finance working capital, capital expenditures, investments or acquisitions, or for other purposes. If we do so, the risks related to our high level of debt could intensify. Specifically, our high level of debt could:

- make it more difficult for us to satisfy our debt obligations and other ongoing business obligations, which may result in defaults;
- result in an event of default if we fail to comply with the financial and other covenants contained in the agreements governing our debt instruments, which could result in all of our debt becoming immediately due and payable or require us to negotiate an amendment to financial or other covenants that could cause us to incur additional fees and expenses;
- limit our ability to obtain additional financing to fund future working capital, capital expenditures, acquisitions or other general corporate requirements;
- reduce the availability of our cash flow to fund working capital, capital expenditures, acquisitions and other general corporate purposes and limit our ability to obtain additional financing for these purposes;
- increase our vulnerability to the impact of adverse economic and industry conditions;
- expose us to the risk of increased interest rates as certain of our borrowings, including borrowings under the credit facility, are at variable rates of interest;
- limit our flexibility in planning for, or reacting to, and increasing our vulnerability to, changes in our business, the industries in which we operate, and the overall economy;
- place us at a competitive disadvantage compared to other, less leveraged competitors; and
- increase our cost of borrowing.

Any of the above-listed factors could have an adverse effect on our business, financial condition and results of operations and our ability to meet our payment obligations under our debt agreements.

We may not be able to generate sufficient cash to service all of our indebtedness and may be forced to take other actions to satisfy our obligations under our indebtedness, which may not be successful.

Our ability to make scheduled payments on or refinance our debt obligations depends on our financial condition and operating performance, which are subject to prevailing economic and competitive conditions and to certain financial, business, legislative, regulatory and other factors some of which are beyond our control. We may be unable to maintain a level of cash flows from operating activities sufficient to permit us to pay the principal, premium, if any, and interest on our indebtedness.

If our cash flows and capital resources are insufficient to fund our debt service obligations, we could face substantial liquidity problems and could be forced to reduce or delay investments and capital expenditures or to dispose of material assets or operations, seek additional debt or equity capital or restructure or refinance our indebtedness. We may not be able to effect any such alternative measures, if necessary, on commercially reasonable terms or at all and, even if successful, those alternative actions may not allow us to meet our scheduled debt service obligations. Our debt agreements restrict our ability to dispose of assets and use the proceeds from those dispositions and may also restrict our ability to raise debt or equity capital to be used to repay other indebtedness when it becomes due. We may not be able to consummate those dispositions or to obtain proceeds in an amount sufficient to meet any debt service obligations then due.

Our inability to generate sufficient cash flows to satisfy our debt obligations, or to refinance our indebtedness on commercially reasonable terms or at all, would materially and adversely affect our financial position and results of operations and our ability to satisfy our debt obligations.

If we cannot make scheduled payments on our debt, we will be in default and the lenders under our credit facility could terminate their commitments to loan money, the lenders could foreclose against the assets securing their borrowings, the holders of our 2024 6% Notes could declare all outstanding principal, premium, if any, and interest to be due and payable, and we could be forced into bankruptcy or liquidation. All of these events could result in a loss of your investment.

We are required to comply with certain financial and operating covenants under our debt agreements. Any failure to comply with those covenants could cause amounts borrowed to become immediately due and payable and/or prevent us from borrowing under the credit facility.

We are required to comply with specified financial and operating covenants under our debt agreements and to make payments under our debt, which limit our ability to operate our business as we otherwise might operate it. Our failure to comply with any of these covenants or to meet any debt payment obligations could result in an event of default which, if not cured or waived, would result in any amounts outstanding, including any accrued interest and/or unpaid fees, becoming immediately due and payable. We might not have sufficient working capital or liquidity to satisfy any repayment obligations in the event of an acceleration of those obligations. In addition, if we are not in compliance with the financial and operating covenants under the credit facility at the time we wish to borrow funds, we will be unable to borrow funds.

In addition, the financial and operating covenants under the credit facility may limit our ability to borrow funds, including for strategic acquisitions and share repurchases.

We may be unable to meet our goal of returning 40% of free cash flow to shareholders through share repurchases, which could decrease your expected return on investment in PTC stock.

Our capital allocation strategy includes a long-term goal of returning approximately 40% of free cash flow (cash flow from operations less capital expenditures) to shareholders through share repurchases. Meeting this goal requires us to generate consistent free cash flow and have available capital in the years ahead in an amount sufficient to enable us to continue investing in organic and inorganic growth as well as to return a significant portion of the cash generated to stockholders in the form of share repurchases. We may not meet this goal if we do not generate the free cash flow we expect, if we use our available cash to satisfy other priorities, if we have insufficient funds available to make such repurchases, or if we are unable to borrow funds under our credit facility to make such repurchases.

Additionally, our cash flow fluctuates over the course of the year and over multiple years, so, although our goal is to return 40% of free cash flow to shareholders, that is an average over a longer term and the number of shares repurchased and amount of free cash flow returned in any given period will vary and may be more or less than 40% in any such period. Finally, the number of shares repurchased for a given amount of cash will vary based on PTC's stock price, so the number of shares repurchased will not be a consistent or predictable number or percentage of outstanding stock.

Our stock price has been volatile, which may make it harder to resell shares at a favorable time and price.

Market prices for securities of software companies are generally volatile and are subject to significant fluctuations that may be unrelated or disproportionate to the operating performance of these companies. The trading prices and valuations of these stocks, and of ours, may not be predictable. Negative changes in the public's perception of the prospects of software companies, or of PTC or the markets we serve, could depress our stock price regardless of our operating results.

Also, a large percentage of the Shares is held by institutional investors and by Rockwell Automation. Purchases and sales of the Shares by these investors could have a significant impact on the market price of the stock. For more information about those investors, please see PTC's Definitive Proxy Statement, filed with the SEC on January 24, 2018 ("PTC 2018 Proxy Statement"), with respect to our most recent annual meeting of stockholders and Schedules 13D and 13G filed with the SEC with respect to the Shares.

III. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

We face exposure to financial market risks, including adverse movements in foreign currency exchange rates and changes in interest rates. These exposures may change over time as business practices evolve and could have a material adverse impact on our financial results.

3.1 Foreign currency exchange risk

Our earnings and cash flows are subject to fluctuations due to changes in foreign currency exchange rates. Our most significant foreign currency exposures relate to Western European countries, Japan, Israel, China and Canada. We enter into foreign currency forward contracts to manage our exposure to fluctuations in foreign exchange rates that arise from receivables and payables denominated in foreign currencies. We do not enter into or hold foreign currency derivative financial instruments for trading or speculative purposes nor do we enter into derivative financial instruments to hedge future cash flow or forecast transactions.

Our non-U.S. revenues generally are transacted through our non-U.S. subsidiaries and typically are denominated in their local currency. In addition, expenses that are incurred by our non-U.S. subsidiaries typically are denominated in their local currency. In 2018, 2017, and 2016, approximately two-thirds of our revenue and half of our expenses were transacted in currencies other than the U.S. dollar. Currency translation affects our reported results because we report our results of operations in U.S. Dollars. Historically, our most significant currency risk has been changes in the Euro and Japanese Yen relative to the U.S. Dollar. Based on current revenue and expense levels (excluding restructuring charges and stock-based compensation), a \$0.10 change in the USD to European exchange rates and a 10 Yen change in the Yen to USD exchange rate would impact operating income by approximately \$16 million and \$6 million, respectively.

Our exposure to foreign currency exchange rate fluctuations arises in part from intercompany transactions, with most intercompany transactions occurring between a U.S. dollar functional currency entity and a foreign currency denominated entity. Intercompany transactions typically are denominated in the local currency of the non-U.S. dollar functional currency subsidiary in order to centralize foreign currency risk. Also, both PTC (the parent company) and our non-U.S. subsidiaries may transact business with our customers and vendors in a currency other than their functional currency (transaction risk). In addition, we are exposed to foreign exchange rate fluctuations as the financial results and balances of our non-U.S. subsidiaries are translated into U.S. dollars (translation risk). If sales to customers outside of the United States increase, our exposure to fluctuations in foreign currency exchange rates will increase.

Our foreign currency risk management strategy is principally designed to mitigate the future potential financial impact of changes in the U.S. dollar value of balances denominated in foreign currency, resulting from changes in foreign currency exchange rates. Our foreign currency hedging program uses forward contracts to manage the foreign currency exposures that exist as part of our ongoing business operations. The contracts primarily are denominated in Canadian Dollars and European currencies, and have maturities of less than three months.

Generally, we do not designate foreign currency forward contracts as hedges for accounting purposes, and changes in the fair value of these instruments are recognized immediately in earnings. Because we enter into forward contracts only as an economic hedge, any gain or loss on the underlying foreign-denominated balance would be offset by the loss or gain on the forward contract. Gains and losses on

forward contracts and foreign denominated receivables and payables are included in foreign currency net losses.

As of September 30, 2018 and 2017, we had outstanding forward contracts for derivatives not designated as hedging instruments with notional amounts equivalent to the following:

Currency Hedged	September 30,	
	2018	2017
	(in thousands)	
Canadian/U.S. Dollar	\$ 7,334	\$ 12,809
Euro/U.S. Dollar	297,730	244,000
British Pound/U.S. Dollar	7,074	907
Israeli Sheqel/U.S. Dollar	9,778	8,820
Japanese Yen/Euro	—	17,694
Japanese Yen/U.S. Dollar	37,456	3,198
Swiss Franc/U.S. Dollar	11,944	605
Swiss Franc / Euro	—	7,157
Swedish Krona / U.S. Dollar	18,207	4,627
Chinese Yuan offshore / Euro	—	10,423
Singapore Dollar / U.S. Dollar	1,314	1,186
Chinese Renminbi/U.S. Dollar	9,010	—
All other	6,109	7,093
Total	\$ 405,956	\$ 318,519

As of September 30, 2018 and 2017, we had outstanding forward contracts designated as cash flow hedges with notional amounts equivalent to the following:

Currency Hedged	September 30,	
	2018	2017
	(in thousands)	
Euro / U.S. Dollar	\$ 8,495	\$ 64,831
Japanese Yen / U.S. Dollar	2,193	22,675
SEK / U.S. Dollar	1,708	14,091
Total	\$ 12,396	\$ 101,597

3.2 Debt

In addition to amounts due under our 2024 6% Notes as described above, as of September 30, 2018, we had \$148.1 million outstanding under our variable-rate credit facility. Loans under the credit facility bear interest at variable rates which reset every 30 to 180 days depending on the rate and period selected by us. These loans are subject to interest rate risk as interest rates will be adjusted at each rollover date to the extent such amounts are not repaid. As of September 30, 2018, the annual rate on the credit facility loans was 3.8%. If there was a hypothetical 100 basis point change in interest rates, the annual net impact to earnings and cash flows would be \$1.5 million. This hypothetical change in cash flows and earnings has been calculated based on the borrowings outstanding at September 30, 2017 and a 100 basis point per annum change in interest rate applied over a one-year period.

3.3 Cash and cash equivalents

As of September 30, 2018, cash equivalents were invested in highly liquid investments with maturities of three months or less when purchased. We invest our cash with highly rated financial institutions in North America, Europe and Asia-Pacific and in diversified domestic and international money market mutual funds. At September 30, 2018, we had cash and cash equivalents of \$29.6 million in the United States, \$88.5 million in Europe, \$95.6 million in the Pacific Rim (including India), \$14.8 million in Japan and \$31.4 million in other non-U.S. countries. Given the short maturities and investment grade quality of the portfolio holdings at September 30, 2018, a hypothetical 10% change in interest rates would not materially affect the fair value of our cash and cash equivalents.

Our invested cash is subject to interest rate fluctuations and, for non-U.S. operations, foreign currency risk. In a declining interest rate environment, we would experience a decrease in interest income. The opposite holds true in a rising interest rate environment. Over the past several years, the U.S. Federal Reserve Board, European Central Bank and Bank of England have changed certain benchmark interest rates, which have led to declines and increases in market interest rates. These changes in market interest rates have resulted in fluctuations in interest income earned on our cash and cash equivalents. Interest income will continue to fluctuate based on changes in market interest rates and levels of cash available for investment. Our consolidated cash balances were impacted favorably by \$7.8 million and \$1.1 million in 2018 and 2017, respectively and unfavorably by \$6.8 million in 2016, due to changes in foreign currencies relative to the U.S. dollar, particularly the Euro and the Japanese Yen.

SECTION B — SUPPLEMENTAL INFORMATION CONCERNING PTC AND THE ESPP

I. THE OUTLINE

1.1 Purpose of the ESPP

The purpose of the ESPP is to provide a method for eligible employees of the Company and designated subsidiaries who wish to become stockholders of the Company an opportunity to purchase Shares at a discount through regular payroll deductions, subject to ESPP limitations.

The ESPP was approved by the Board on January 8, 2016 and the stockholders at the 2016 annual meeting of stockholders held on March 2, 2016.

1.2 Shares Offered under the ESPP

The maximum aggregate number of Shares that may be purchased upon exercise of rights granted under the ESPP shall be 2,000,000. Such number is subject to adjustments in accordance with the ESPP. Each Share has a par value of \$0.01. Such Shares are authorized but unissued Shares.

On the first day of each Offering Period (the Offering Periods, as defined in Element E.3 - Part I of this prospectus), Participants are granted an option consisting of a right to purchase Shares under the ESPP. The maximum number of Shares that a Participant may purchase under the ESPP in any one Offering Period shall not exceed 1,500 Shares.

Notwithstanding the foregoing, no eligible employee will be granted an option to purchase Shares (or other stock of PTC) under the ESPP or any other employee stock purchase plan at a rate exceeding \$25,000 (based on the Fair Market Value of a Share on the Offering Date) in any calendar year.

1.3 Purchase Period

The ESPP is offered in two sequential 6-month offering periods (“Offering Periods”) per year. Generally, eligible employees may elect to participate in the ESPP by enrolling electronically online through an election tool during a specified two-week period during the month prior to the beginning of an Offering Period. Offering Periods commence on February 1 and August 1 of each year (each an “Offering Date”), and end on July 31 and January 31, respectively, or on such other dates as the Committee shall determine. The open enrollment periods for the Offering Periods commencing February 1, 2019 and August 1, 2019 shall be on or about January 7, 2019 through January 18, 2019, and on or about July 8, 2019 through July 19, 2019, respectively.

1.4 Purchase Price

The purchase price per Share will be eighty-five percent (85%) of the lower of the Fair Market Value of a Share on (a) the Offering Date, or (b) the Purchase Date. Fair Market Value is the closing price for the Shares on Nasdaq on the applicable date. The Purchase Date is generally the last business day of each Offering Period.

1.5 Purchase of Shares

On the Purchase Dates (as defined in Element E.3 - Part I of this prospectus), each Participant who has not withdrawn from the ESPP and whose participation in the ESPP has not terminated before such Purchase Date, will automatically purchase a number of whole Shares determined by dividing the total payroll deductions accumulated in the Participant’s ESPP account during the Offering Period, as converted into U.S. dollars (if necessary), by the Purchase Price for such Offering Period. No fractional Shares will be purchased. The number of Shares that may be purchased may be limited by the Share purchase limitations discussed in Section 1.2 above. Further, if the aggregate number of Shares subscribed for in any Offering Period exceeds the number of Shares that remain available for issuance under the ESPP, the Board or the Committee shall make a pro rata allocation of the Shares available in as uniform a manner as shall be practicable and as it shall deem to be equitable.

Any cash balance remaining in a Participant’s ESPP account following any Purchase Date will be refunded to Participant as soon as practicable after such Purchase Date.

1.6 Term of the ESPP

The ESPP will continue in effect until the earlier to occur of (i) termination by the Board or (ii) issuance of all Shares reserved for issuance under the ESPP.

1.7 Termination or Amendment of the ESPP

The Board may amend, modify, suspend or terminate the ESPP at any time, without notice, subject to any required stockholder approval. However, a Participant’s rights under the ESPP with respect to any ongoing or completed offering will not be adversely affected.

II. ELIGIBILITY

2.1 Eligible Employees

For purposes of the offer of the ESPP within the EEA, all employees of the Company’s designated subsidiaries within the EEA are eligible to participate in the ESPP.

2.2 Participation of Eligible Employees

Eligible employees who wish to participate in the ESPP must enroll electronically online through an election tool. The eligible employee will receive an email with enrollment documents and links to the online election tool during the month prior to the beginning of an Offering Period. The employee must authorize payroll deductions at the time of enrollment. A Participant's election to participate in the ESPP will remain in effect for subsequent Offering Periods, unless otherwise terminated or altered, or the Participant is no longer considered an eligible employee.

2.3 Payroll Deductions

Shares acquired pursuant to the exercise of options may be paid for only by means of payroll deductions from Participant's compensation accumulated during the Offering Period for which such option was granted based on the Participant's election of the percentage of the Participant's base salary to be deducted (however, if local law does not permit payroll deductions, the Committee may modify the procedure for the payment of the Purchase Price to conform to such laws). A Participant may elect to have amounts deducted with respect to the Participant's base salary only and not with respect to commissions, overtime, shift differentials, incentive compensation, bonuses and other special payments.

Except as otherwise provided in the ESPP, the amount to be deducted under the ESPP from a Participant's compensation on each payday during an Offering Period will be determined by the Participant's online election. The online election will set forth the percentage of the Participant's base salary to be deducted on each payday during an Offering Period in whole percentages of not less than 1% nor more than 10% (or such other percentages as the Committee may establish from time to time before an Offering Date).

Until and unless determined otherwise by the Committee, a Participant may not change the amount of contributions during any Offering Period. However, the Participant may withdraw from an Offering Period or elect to increase or decrease his/her payroll deductions for any subsequent Offering Period.

2.4 Discontinuance of Participation of Participants

A Participant must use the online election tool to withdraw from any Offering Period. If a Participant chooses to withdraw from the Offering Period, he or she must do so prior to 18 days before the end of the Offering Period. Once a Participant has withdrawn from an Offering Period, he/she cannot resume participation in the same Offering Period. However, the employee may participate in a later Offering Period by electing to do so during the enrollment period for that later Offering Period.

2.5 Termination of Employment of Participants

A Participant's participation in the ESPP will immediately cease upon termination of employment for any reason, including retirement, disability, or death. No further payroll deductions will be credited and any collected payroll deduction will be distributed to the Participant or, in the case of death to the Participant's beneficiary, (in each case, without interest) within a reasonable time afterwards.

III. DELIVERY AND SALE OF THE SHARES

The Company will deliver to each Participant the Shares within a reasonable time after the Purchase Date using any such means as may be determined by the Committee. Shares purchased under the ESPP will generally be deposited to each Participant's account at a broker designated by PTC. PTC reserves the right to change the designated broker at any time.

A Participant may sell any Shares purchased under the ESPP at any time, including immediately upon receipt, subject to any insider trading restrictions. However, until the Shares are sold, those Shares must

be held at PTC's designated broker for a period of eighteen (18) months following the respective Purchase Date.

IV. RIGHTS RELATED TO THE SHARES

4.1 Type and the Class of the Securities Being Offered, Including the Security Identification Code

As of September 30, 2018, PTC was authorized to issue 500,000,000 Shares, and 5,000,000 shares of preferred stock, par value \$0.01. As of November 15, 2018, there were 118,675,240 Shares outstanding, and no shares of preferred stock were issued and outstanding. 0.5 million of the preferred stock are designated as Series A Junior Participating Preferred Stock. The Board is authorized to fix the rights and terms for any series of preferred stock without additional stockholders approval.

The Shares offered pursuant to this prospectus are authorized but unissued Shares.

The Shares are or will be, after their issuance, listed on Nasdaq under the symbol "PTC." The CUSIP number for the Shares is 69370C100.

4.2 Legislation Under Which the Securities Have Been Created

The Shares were authorized and issued under Massachusetts General Law, pursuant to Chapter 156, Section 14. Except as otherwise expressly required under the laws of a country, the ESPP and all rights thereunder shall be governed by and construed in accordance with the Massachusetts General Law, Chapter 156, Section 14.

4.3 Form of Securities, Name and Address of the Entity in Charge of Keeping the Records

In general, stockholders may hold the Shares in certificated, book entry or street name form. The records related to Shares acquired by Participants under the ESPP are kept with E*TRADE Financial Corporate Services, Inc.

The address and telephone number for E*TRADE Financial Corporate Services, Inc. are:

Address: 4005 Windward Plaza Drive
Alpharetta, GA 30005
U.S.A.

Telephone number: +1 650-599-0125 or 00-800-3338-7233

PTC's designated ESPP broker is currently E*TRADE Securities LLC ("E*TRADE"). The address and telephone number of the broker is as follows:

Address: PO Box 484
Jersey City, NJ 07303-0484
U.S.A.

Telephone number: +1 650-599-0125 or 00-800-3338-7233

There is no charge to Participants for the acquisition or holding of the Shares under the ESPP. Commissions related to the sale of Shares are described below.

Commission

E*TRADE Financial Corporate Services, Inc. imposes a fee for the sale of Shares equal to \$19.95 per trade of up to 5,000 shares and \$19.95 per trade plus \$0.01 per share for each share in excess of 5,000 and a processing fee for international check requests or for wiring sale proceeds. In addition, the SEC imposes a fee on the transfer of the Shares. This fee is paid to the SEC at the time of sale and is required for all equity trades. Upon selling the Shares, the Participants will be charged a fee equal to \$0.000013 multiplied by the total principal amount of the sale proceeds. The SEC may announce new fee rates at its discretion.

4.4 Currency of the Securities Issue

The United States Dollar is the currency of the securities issue. Participants assume the risk of any currency fluctuations from the time of their contributions to the ESPP by payroll deductions through the selling of their Shares.

4.5 Rights Attached to the Securities

No Participant shall have any voting, dividend, or other stockholder rights with respect to any Offering Period under the ESPP until the Shares have been purchased and delivered to the Participant. Following such purchase and delivery, the Participant shall be entitled to the rights attached to the Shares, as further described below:

Dividend Rights. As provided in PTC's Restated Articles of Organization, dividends may be declared and paid on the Shares from funds lawfully available therefore as and when determined by the Board and subject to any preferential dividend rights of any then outstanding preferred stock.

PTC does not pay cash dividends on the Shares and PTC retains earnings for use in its business or to repurchase the Shares. Although PTC reviews its dividend policy periodically, its review may not cause PTC to pay any dividends in the future. Further, PTC's debt instruments require it to maintain specified leverage and fixed-charge ratios that limit the amount of dividends that it could pay.

Except as otherwise provided by the articles of organization or by-laws, under Massachusetts General Law, Chapter 156D, Section 6.23(a), Shares may be issued pro rata and without consideration to the corporation's stockholders or to the stockholders of one or more classes or series. An issuance of Shares under this subsection is a share dividend.

Shares of one class or series shall not be issued as a share dividend in respect of shares of another class or series unless: (1) authorized by the articles of organization; (2) the holders of a majority of the outstanding shares of the class or series to be issued approve the issue; or (3) there are no outstanding shares of the class or series to be issued. In addition, shares of a class or series having preference over another class or series with respect to distributions, including dividends and distributions upon the dissolution of the corporation, shall not be issued as a share dividend in respect of shares of such other class or series if there are at the time any outstanding shares of any third class or series as to which the shares then to be issued have a right with respect to a distribution which is prior, superior or substantially equal unless: (1) authorized by the articles of organization; or (2) the holders of a majority of the outstanding shares of such third class or series approve the issue.

If the board of directors does not fix the record date for determining stockholders entitled to a share dividend, it is the date the board of directors authorized the share dividend.

Voting Rights. As provided in PTC's Restated Articles of Organization, the holders of the Shares are entitled to one vote for each share held at all meetings of stockholders (and written actions in lieu of meetings). There shall be no cumulative voting.

The annual meeting of stockholders shall be held on the date (which shall not be a legal holiday in the place where the meeting is to be held) and at the time fixed by the Board of Directors or the Chief Executive Officer and stated in the notice of the meeting. The annual meeting shall be held for the purpose of electing directors and such other purposes as are specified in the notice of meeting.

Special meetings of stockholders may be called by the Chief Executive Officer or by the Board of Directors. Upon written application, in accordance with these By-Laws and any other applicable requirements, of one or more stockholders who are entitled to vote and who hold at least 40% of the capital stock entitled to vote at the meeting, special meetings shall be called by the Secretary, or in the case of the death, absence, incapacity or refusal of the Secretary, by any other officer.

Directors are elected by a plurality of votes received. However, PTC maintains a Majority Voting Policy for uncontested director elections that requires a director who does not receive a majority of the votes cast in favor of his or her election to promptly tender his or her resignation from the Board.

Unless otherwise provided by the by-laws or articles of organization, under Massachusetts General Law, Chapter 156, Section 32, stockholders entitled to vote shall, except as provided in Sections 2 and 4 of Chapter 157 of the Massachusetts General Law, have one vote for each Share owned by them; provided, that in corporations having two or more classes of stock, the voting powers of the different classes may be fixed in the manner provided by Chapter 156, Section 14 of the Massachusetts General Law. Capital stock shall not be voted upon if any instalment of the subscription therefor which has been duly demanded under Chapter 156, Section 18 of the Massachusetts General Law is overdue and unpaid. Stockholders may vote either in person or by proxy. No proxy which is dated more than six months before the meeting named therein shall be accepted, and no such proxy shall be valid after the final adjournment of such meeting.

Right to Receive Liquidation Distributions. Upon the dissolution or liquidation of the Company, whether voluntary or involuntary, holders of Shares will be entitled to receive all assets of the Company available for distribution to its stockholders, subject to any preferential rights of any then outstanding preferred stock.

No Preemptive, Redemptive or Conversion Provisions. The Shares are not entitled to preemptive rights and are not subject to conversion or redemption.

4.6 Transferability

The Shares offered under the ESPP are registered on a registration statement on Form S-8 with the SEC and are generally freely transferable.

The ESPP is intended to provide Shares for investment and not for resale. The Company does not, however, intend to restrict or influence any Participant in the conduct of his or her own affairs. A Participant, therefore, may sell Shares purchased under the ESPP at any time he or she chooses, subject to compliance with any applicable securities laws and related policies of the Company. Participants assume the risk of any market fluctuations in the price of the Shares.

4.7 General Provisions Applying to Business Combinations

The Company is subject to Chapter 110F, Section 1 of the Massachusetts General Law, which, subject to certain exceptions, prohibits a Massachusetts corporation from engaging in any “business combination” with an “interested stockholder” for a period of three years following the time that such stockholder became an interested stockholder, unless:

- the board of directors of the corporation approves either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder, prior to the time the interested stockholder attained that status;

- upon the closing of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned at least ninety of the voting stock of the corporation outstanding at the time the transaction commenced, excluding for purposes of determining the number of shares outstanding, those shares owned (i) by persons who are directors and also officers and (ii) by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or
- at or subsequent to such time, the business combination is approved by the board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least two-thirds of the outstanding voting stock that is not owned by the interested stockholder.

With certain exceptions, an “interested stockholder” under Section 110F of the Massachusetts General Law is a person who owns five percent or more of the corporation’s outstanding voting stock or is an affiliate or associate of the corporation and was the owner of fifteen percent or more of such voting stock at any time within the previous three years.

In general, Section 110F, Section 3 of the Massachusetts General Law defines a business combination to include:

- any merger or consolidation involving the corporation or any of its subsidiaries with, or caused by, the interested stockholder;
- any sale, lease, exchange, pledge, transfer or other disposition of ten percent or more of the assets of the corporation involving the stockholder;
- subject to certain exceptions, any transaction that results in the issuance or transfer by the corporation of any stock of the corporation or any of its subsidiaries to the interested stockholder;
- any transaction involving the corporation or any of its subsidiaries that has the effect of increasing the proportionate share of the stock or any class or series of the corporation or of any such subsidiary beneficially owned by the interested stockholder; or
- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through the corporation or any of its subsidiaries.

PTC may “opt out” of this provision if PTC stockholders vote to do so by the affirmative vote of a majority of the shares entitled to vote. PTC has not done so as of the date of this prospectus.

V. STATEMENT OF CAPITALIZATION AND INDEBTEDNESS AS OF SEPTEMBER 30, 2018

5.1 Capitalization and Indebtedness (in thousands)

Total Current debt	\$	4,857
- Guaranteed		-
- Secured		-
- Unguaranteed / Unsecured	\$	4,857
Total Non-Current debt (excluding current portion of long-term debt)	\$	648,125
- Guaranteed		-
- Secured	\$	148,125
- Unguaranteed / Unsecured	\$	500,000

Stockholders' equity	
a. Share Capital and Additional Paid-in Capital	\$ 1,559,583
b. Legal Reserve	
c. Total Other Reserves	\$ (684,994)
- Accumulated deficit	\$ (599,409)
- Accumulated other comprehensive loss	\$ (85,585)
Total stockholders' equity	\$ 874,589

5.2 Net Indebtedness (in thousands)

A.+B.	Cash and cash equivalents	\$ 259,946
C.	Short-term Marketable Investments*	\$ 25,836
D.	Liquidity (A) + (B) + (C)	\$ 285,782
E.	Current Financial Receivable	-
F.	Current Bank debt	-
G.	Current portion of non-current debt	\$ 4,857
H.	Other current financial debt	-
I.	Other Financial Debt (F) + (G) + (H)	\$ 4,857
J.	Net Current Financial Indebtedness (I) – (E) – (D)	\$ (280,925)
K.	Non-current Bank loans	\$ 148,125
L.	Bonds Issued	\$ 500,000
M.	Other non-current loans	-
N.	Non-current Financial Indebtedness (K) + (L) + (M)	\$ 648,125
O.	Net Financial Indebtedness (J) + (N)	\$ 367,200

* In addition to the short-term marketable securities, there are long-term marketable securities of \$30,115 (in thousands).

In November 2018, PTC borrowed \$80 million under its credit facility to fund working capital requirements, including 2018 year end incentive-based compensation accruals.

5.3 Indirect and Contingent Indebtedness

Leasing Arrangements

We lease office facilities under operating leases expiring at various dates through 2037. Certain leases require us to pay for taxes, insurance, maintenance and other operating expenses in addition to rent. Lease expense was \$36.9 million, \$35.8 million and \$37.2 million in 2018, 2017 and 2016, respectively. At September 30, 2018, our future minimum lease payments under noncancellable operating leases are as follows:

<u>Year ending September 30,</u>	<u>(in thousands)</u>
2019	\$ 38,690
2020	33,753
2021	33,109
2022	28,248
2023	18,336
Thereafter	200,543
Total minimum lease payments	<u>\$ 352,679</u>

Amounts above include future minimum lease payments for our corporate headquarters facility located in Needham, Massachusetts. The lease for our headquarters facility was renewed in the first quarter of 2011 for an additional 10 years (through November 2022) with a ten-year renewal option through November 2032. Under the terms of the lease, we are paying approximately \$7.4 million in annual base rent plus operating expenses. Utilities related to this lease are excluded from the above table due to variability year to year. These costs were approximately \$1.6 million in 2018. The amended lease provides for \$12.8 million in landlord funding for leasehold improvements which we completed in 2014. We capitalized these leasehold improvements and will amortize them to expense over the shorter of the lease term or their expected useful life. The \$12.8 million of funding by the landlord is not included in the table above and reduces rent expense over the lease term.

On September 7, 2017, we entered into a lease agreement with SCD L2 Seaport Square LLC for approximately 250,000 square feet located at 121 Seaport Boulevard, Boston, Massachusetts. Upon completion of construction of the new facility, we expect to move our headquarters from Needham to Boston. The term of the lease is expected to run from January 1, 2019 through June 30, 2037, subject to adjustment based on the initial occupancy date. Base rent for the first year of the lease is \$11.0 million and will increase by \$1 per square foot leased per year thereafter (\$0.3 million per year). Base rent, which first becomes payable on July 1, 2020, subject to adjustment based on the lease commencement date, is included in the operating lease obligations above. In addition to the base rent, PTC shall pay its pro rata portions of building operating costs and real estate taxes (together, "Additional Rent"). Additional rent, equal to approximately 63% of total building operating costs and real estate taxes, is estimated to be approximately \$7.1 million for the first year we begin paying rent and is not included in the operating lease payments above. The lease provides for up to approximately \$25 million in landlord funding for leasehold improvements (\$100 per square foot). We capitalize leasehold improvements as the assets are placed in service and amortize them to expense over the shorter of the lease term or their expected useful life. The \$25 million of funding by the landlord is not included in the table above and reduces rent expense over the lease term.

As of September 30, 2018 and 2017, we had letters of credit and bank guarantees outstanding of \$15.5 million (of which \$1.1 million was collateralized) and \$4.3 million (of which \$1.2 million was collateralized), respectively, primarily related to our corporate headquarters lease.

Legal and Regulatory Matters

Korean Tax Audit

In the fourth quarter of 2016, we received an assessment of approximately \$12 million from the tax authorities in Korea. The assessment relates to various tax issues, primarily foreign withholding taxes. We have appealed and intend to vigorously defend our positions. We believe that upon completion of a multi-level appeal process it is more likely than not that our positions will be sustained. Accordingly, we have not recorded a tax reserve for this matter. We paid this assessment in the first quarter of 2017 and have recorded the amount in other assets, pending resolution of the appeal process.

Legal Proceedings

We are subject to various legal proceedings and claims that arise in the ordinary course of business. We do not believe that resolving the legal proceedings and claims that we are currently subject to will have a material adverse impact on our financial condition, results of operations or cash flows. However, the results of legal proceedings cannot be predicted with certainty. Should any of these legal proceedings and claims be resolved against us, the operating results for a particular reporting period could be adversely affected.

Accruals

With respect to legal proceedings and claims, we record an accrual for a contingency when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. For legal

proceedings and claims for which the likelihood that a liability has been incurred is more than remote but less than probable, we estimate the range of possible outcomes. As of September 30, 2018, we estimate approximately \$0.7 million to \$5.0 million in legal proceedings and claims, of which we had accrued \$0.9 million. As of September 30, 2017, we had a legal proceedings and claims accrual of \$0.3 million.

Accounts Receivable

Accounts receivable as of September 30, 2017 included an amount invoiced under a multi-year contract for which the period of performance, and related revenue recognized, spanned a number of years (with no revenue recognized since the first quarter of 2017). The invoiced amount was disputed by the customer. A settlement reached in September 2018 included partial payment of the receivable and new software purchases. The net revenue write-down recorded in the fourth quarter was \$9.3 million, comprised of \$14.5 million professional services revenue write-down, partially offset by new license revenue of \$5.2 million.

Guarantees and Indemnification Obligations

We enter into standard indemnification agreements in the ordinary course of our business. Pursuant to such agreements with our business partners or customers, we indemnify, hold harmless, and agree to reimburse the indemnified party for losses suffered or incurred by the indemnified party, generally in connection with patent, copyright or other intellectual property infringement claims by any third party with respect to our products, as well as claims relating to property damage or personal injury resulting from the performance of services by us or our subcontractors. The maximum potential amount of future payments we could be required to make under these indemnification agreements is unlimited. Historically, our costs to defend lawsuits or settle claims relating to such indemnity agreements have been minimal and we accordingly believe the estimated fair value of liabilities under these agreements is immaterial.

We warrant that our software products will perform in all material respects in accordance with our standard published specifications in effect at the time of delivery of the licensed products for a specified period of time. Additionally, we generally warrant that our consulting services will be performed consistent with generally accepted industry standards. In most cases, liability for these warranties is capped. If necessary, we would provide for the estimated cost of product and service warranties based on specific warranty claims and claim history; however, we have not incurred significant cost under our product or services warranties. As a result, we believe the estimated fair value of these liabilities is immaterial.

VI. MAXIMUM DILUTION AND NET PROCEEDS

6.1 Maximum Dilution

The Shares under the ESPP are offered pursuant to this prospectus to 1,032 eligible employees³ in France, Germany, Romania and the United Kingdom. As indicated in Section 1.2 above, the maximum rate at which Participants may accrue the right to purchase Shares under the ESPP may not exceed \$25,000 worth of Shares (based on the Fair Market Value of Shares as determined on the Offering Date of each Offering Period) in any calendar year. However, as noted above, there are other limitations on Share purchases (such as no more than 10% of eligible compensation may be contributed for ESPP purchases and no more than 1,500 Shares may be purchased in any one Offering Period) which may result in a Participant not being able to purchase \$25,000 worth of Shares in a calendar year.

The Offering Periods consist of two six-month periods commencing on February 1 and August 1 of each year. Assuming that (i) no other ESPP limitations are exceeded and (ii) the employees enroll in the Offering Period that begins in February 2019, each Participant would be entitled to purchase a maximum of 294 whole Shares in July 2019 for a maximum of \$21,216.51 in contributions per Participant. These

³ As of November 20, 2018, there were 212 eligible employees in France, 439 eligible employees in Germany, 227 eligible employees in Romania and 154 eligible employees in the United Kingdom.

amounts are based on a hypothetical Share price of \$84.90 (which was the closing price of the Shares on November 27, 2018) on February 1, 2019 (i.e., the first trading day of the Offering Period), and a hypothetical purchase price of \$72.165 (85% of \$84.90) on July 31, 2019 (i.e. the last trading day of the Offering Period beginning February 1, 2019).

Participants would also be able to purchase additional Shares during the next Offering Period (i.e., August 1, 2019 - January 31, 2020). Assuming that (i) no other ESPP contribution limitations are exceeded, (ii) the hypothetical Share price on August 1, 2019, at which time the \$25,000 limit for the Offering Period beginning on such date will be calculated) is \$84.90 and (iii) that the hypothetical purchase price on January 31, 2020 is \$72.165 (85% of \$84.90), a Participant would be able to purchase a maximum of 294 whole Shares for a maximum of \$21,216.51. Assuming that all of the Participants would each purchase a total of 588 Shares in the Offering Periods beginning February 1, 2019 and August 1, 2019, the maximum number of Shares offered pursuant to this prospectus amounts to 606,816 Shares.

Based on the above assumptions, the holdings of a stockholder of PTC currently holding 1% of the total outstanding share capital of PTC as of November 15, 2018, that is 1,186,752 Shares, and who is not an eligible employee participating in the offer would be diluted as indicated in the following table:

	Percentage of the total outstanding Shares	Total number of outstanding Shares
Before the offering (as of November 15, 2018)	1.00%	118,675,240
After issuance of 606,816 Shares under the ESPP	.995%	119,282,056

6.2 Net Proceeds

Assuming that each of the 1,032 eligible employees in France, Germany, Romania and the United Kingdom, would purchase the maximum amount of Shares under the ESPP offered pursuant to this prospectus, that is, a total of 588 Shares each, for a maximum of \$42,433.02 in contributions per person, at \$72.165 (85% of a hypothetical Share price of \$84.90 which was the closing price of the Shares on November 27, 2018), and assuming that the Shares offered under the ESPP would all be newly issued, then the gross proceeds to PTC in connection with the offer under the ESPP pursuant to this prospectus would be \$43,790,876.64. After deducting approximately \$100,000 in legal and accounting expenses in connection with the offer, the net proceeds would be approximately \$43,690,876.64. The net proceeds will be used for general corporate purposes.

VII. DIRECTORS AND EXECUTIVE OFFICERS

7.1 Board of Directors as of November 29, 2018

<u>Name</u>	<u>Age</u>	<u>Position</u>	<u>Director since</u>
Janice D. Chaffin	64	Independent Director	2013
Phillip M. Fernandez	58	Independent Director	2016
Donald K. Grierson	84	Independent Director	1987
James E. Heppelmann	54	Director, President and Chief Executive Officer	2008
Klaus Hoehn	67	Independent Director	2015

<u>Name</u>	<u>Age</u>	<u>Position</u>	<u>Director since</u>
Paul A. Lacy	71	Independent Director	2009
Dr. Corinna Lathan	51	Independent Director	2017
Blake Moret	56	Director	2018
Robert P. Schechter	70	Chairman of the Board (Independent)	2009

Janice D. Chaffin - Ms. Chaffin served as Group President, Consumer Business Unit of Symantec, a global leader in providing cybersecurity solutions, from April 2007 until her retirement in March 2013 and as Chief Marketing Officer of Symantec from 2003 to 2007. Prior to that, she spent over twenty years at Hewlett-Packard Company, in management and marketing leadership positions.

Ms. Chaffin brings to the Board significant leadership experience with large global technology companies. Ms. Chaffin's skills include financial and accounting expertise as a result of her positions at Symantec Corporation and Hewlett-Packard Company and her service on the Audit Committees of Synopsys, International Game Technology and Informatica. In 2015, Ms. Chaffin completed the requirements to become a NACD Fellow, the highest level of credentialing for corporate directors and corporate governance professionals by the National Association of Corporate Directors. To become a NACD Fellow, Ms. Chaffin demonstrated knowledge of the leading trends and practices that define exemplary corporate governance today and committed to developing professional insights through a comprehensive program of ongoing study.

Ms. Chaffin holds a Bachelor of Arts from the University of California, San Diego and a Masters of Business Administration from the University of California, Los Angeles.

Other Public Company Boards: Electronics for Imaging Inc.
Synopsys, Inc.
International Game Technology (2010 – 2015)
Informatica Corporation (2001-2008)

Phillip M. Fernandez - Mr. Fernandez was a Venture Partner at Shasta Ventures, a venture capital firm, from January 2017 until his retirement in January 2018. Mr. Fernandez was a founder of Marketo, Inc., a global digital marketing software company, and served as its Chief Executive Officer and President from January 2006 to August 2016. Prior to that, he was with Epiphany, Inc., a marketing software company acquired by SSA Global Technologies, Inc., from 1999 to 2005, including as President and Chief Operating Officer from July 2003 until September 2005.

Mr. Fernandez has demonstrated leadership experience as a result of his service at Marketo, Inc. and at Epiphany, Inc. He has also gained significant marketing experience through his role at Marketo, Inc. Mr. Fernandez is also a well-known writer and speaker on topics related to digital marketing, marketing automation, big data, and entrepreneurialism, and is the author of *Revenue Disruption: Game-Changing Sales and Marketing Strategies to Accelerate Growth* (Wiley, 2012).

Mr. Fernandez holds a Bachelor of Arts in History from Stanford University.

Other Public Company Boards: Yext, Inc.
Marketo, Inc. (January 2006 – August 2016)
Tibco Software, Inc. (June 2014 – December 2014)

Donald K. Grierson - Mr. Grierson served as Chief Executive Officer and President of ABB Vetco Gray, Inc., an oil services business, from September 2002 until his retirement in November 2004 and from 1991 to March 2001. He served as Executive Director of ABB Vetco Gray, Inc. from March 2001 to September

2002. Prior to that, Mr. Grierson was a Senior Vice President, Group Executive at General Electric Company and was involved with several high-tech venture capital companies.

Mr. Grierson has significant leadership, management and operating experience as a result of his service at ABB Vetco International, ABB Vetco Gray and General Electric. His skills also include financial and accounting expertise as a result of his positions at ABB Vetco International and ABB Vetco Gray, Inc. as well as his previous service on the PTC Audit Committee. Furthermore, Mr. Grierson has extensive knowledge of the markets in which PTC operates as a result of his tenure on the PTC Board and extensive knowledge of the manufacturing industry as a result of his experience at ABB Vetco International, ABB Vetco Gray, GE, and his service as a director of Cadence and Oracle.

Mr. Grierson holds a Masters of Business Administration from Xavier University and a Bachelor of Science degree in Mechanical Engineering from Ohio University.

James E. Heppelmann - Mr. Heppelmann has served as the President and Chief Executive Officer of PTC since October 2010. He was Chief Operating Officer of PTC from March 2009 to September 2010, Executive Vice President and Chief Product Officer of PTC from February 2003 to February 2009, and Executive Vice President, Software Solutions and Chief Technology Officer of PTC from June 2001 to January 2003. Mr. Heppelmann joined PTC in 1998.

Mr. Heppelmann brings to the Board significant leadership experience in the enterprise software industry as a result of his positions at PTC Inc. and his position at Windchill Technology, Inc., where he was the founder and President prior to its acquisition by PTC. Through his tenure at PTC, he has developed extensive knowledge of PTC's history, technologies and the markets in which PTC operates. Additionally, Mr. Heppelmann has marketing experience as a result of his position as Chief Product Officer of PTC, in which role he was also responsible for PTC's Marketing function. His skills also include technology and research and development expertise as a result of his positions as Chief Product Officer and Chief Technology Officer, and at Windchill Technology, Inc.

Mr. Heppelmann holds a Bachelor's degree in Mechanical Engineering from the University of Minnesota.

Other Public Company Boards: Sensata Technologies Holdings plc

Klaus Hoehn - Mr. Hoehn serves as the Vice President, Advanced Technology and Engineering, at Deere & Company, an agricultural, construction, commercial and consumer equipment manufacturer, a position he has held since January 2006. He joined Deere & Company in 1992 and has served in a number of engineering and product development roles at the company.

As a result of his positions at Deere & Company, Mr. Hoehn has extensive knowledge of manufacturing and the markets in which PTC operates, as well as extensive knowledge of PTC software, including as a user of PTC software. Mr. Hoehn's experience at Deere & Company, a customer of PTC, makes him uniquely qualified to serve as the "voice of the customer" on the Board. His skills also include technology and research and development expertise as a result of his positions at Deere & Company, including in his current role, where he has corporate-level responsibility for directing advanced technology development and engineering services that support worldwide agricultural, construction, and commercial and consumer equipment design and manufacturing.

Mr. Hoehn holds a Bachelor's degree, a Master's degree, and a Doctorate degree in Mechanical and Agricultural Engineering from Rostock University in Germany.

Paul A. Lacy - Mr. Lacy served as President of Kronos Incorporated, a global enterprise software company, from May 2006 until his retirement in June 2008. He served as President, Chief Financial and Administrative Officer, of Kronos from November 2005 through April 2006, and as Executive Vice President and Chief Financial and Administrative Officer of Kronos from April 2002 through October 2005.

Mr. Lacy's skills include extensive financial accounting and manufacturing expertise as a result of his positions at Kronos. During his tenure at Kronos, Kronos grew from a \$26 million hardware company into a \$662 million public global enterprise software company. Mr. Lacy also gained significant leadership and public company software experience as a result of his positions at Kronos Incorporated.

Mr. Lacy holds a Juris Doctor from Boston College Law School and Bachelor of Science in Accounting from Boston College.

Dr. Corinna Lathan - Dr. Lathan is the Chief Executive Officer, Co-Founder and Chair of the Board of AnthroTronix, Inc., a biomedical engineering research and development company that creates diverse products in robotics, digital health, wearable technology, and augmented reality, a position she has held since July 1999. Prior to that, Dr. Lathan was an Associate Professor of Biomedical Engineering at The Catholic University of America and an Adjunct Associate Professor of Aerospace Engineering at the University of Maryland, College Park.

Dr. Lathan has extensive experience as a leader and technology innovator as a result of her work at AnthroTronix and brings to the Board deep expertise in human-technology interfaces for robotics and mobile technology platforms. Her significant experience and expertise in augmented reality and other technologies enable her to help us advance our Internet of Things strategy.

Dr. Lathan holds a B.A. in Biopsychology and Mathematics from Swarthmore College, and an S.M. in Aeronautics and Astronautics and Ph.D. in Neuroscience from MIT.

Blake Moret - Mr. Moret has been the President and Chief Executive Officer of Rockwell Automation, Inc., a company focused on industrial automation and information, since July 2016. He served as Senior Vice President, Control Products and Solutions, at Rockwell Automation from April 2011 until July 2016. Mr. Moret has been with Rockwell Automation for over 32 years, during which served in various roles, including leadership roles in marketing, solutions, services and product groups.

Mr. Moret was appointed to the Board in connection with the entry into a Strategic Alliance Agreement between PTC and Rockwell Automation and a significant investment in PTC by Rockwell Automation under a Securities Purchase Agreement in July 2019. Under the Securities Purchase Agreement, we agreed to appoint an individual proposed by Rockwell Automation and reasonably acceptable to us to the Board. We also agreed to appoint that person to the Corporate Governance Committee. Rockwell Automation designated Mr. Moret as its initial designee. Mr. Moret is considered to be not independent due to the transactions between Rockwell Automation and PTC.

Mr. Moret brings significant leadership experience in factory automation and the factory automation market to the Board as a result of his experience at Rockwell Automation, an area that is a significant focus of our Internet of Things strategy for Smart, Connected Operations.

Mr. Moret holds a Bachelor's degree in Mechanical Engineering from the Georgia Institute of Technology.

Robert P. Schechter - Mr. Schechter served as the Chief Executive Officer of NMS Communications Corporation, a global provider of hardware and software solutions for the communications industry from 1995 until his retirement in 2008.

Mr. Schechter brings to the board significant financial and accounting expertise, as a result of his positions at NMS Communications Corporation and at Lotus Development Corporation, where he was the Chief Financial Officer. He was also a partner at Coopers & Lybrand LLP, an independent audit firm, and served as Chairman of its North East Region High Tech Practice. Through his position at NMS Communications Corporation, he gained relevant knowledge of the manufacturing market and process. He also acquired marketing experience as well as technology and research and development expertise as a result of his position as Senior Vice President at Lotus Development Corporation, where he was responsible for all sales, marketing, customer service and product development outside North America.

Mr. Schechter holds a B.S. from Rensselaer Polytechnic Institute and a Masters of Business Administration from the Wharton School of the University of Pennsylvania.

Other Public Company Boards: Telaria Inc.
EXA Corporation
Unica Corporation (2005 - 2010)
Soapstone Networks, Inc. (2003 - 2009)

7.2 Executive Officers as of November 29, 2018

<u>Name</u>	<u>Age</u>	<u>Position</u>
James E. Heppelmann	54	President and Chief Executive Officer
Andrew Miller	58	Executive Vice President and Chief Financial Officer
Barry F. Cohen, Ph.D.	74	Executive Vice President, Chief Strategy Officer
Matthew Cohen	42	Executive Vice President, Customer Success
Kathleen Mitford	46	Executive Vice President, Products
Aaron C. von Staats	52	Corporate Vice President, General Counsel and Secretary

James E. Heppelmann - Please refer to the information provided in Section 7.1 above.

Andrew Miller is the executive vice president and CFO at PTC. In his current position, Mr. Miller is responsible for the Company's worldwide Accounting, Financial Planning and Analysis, Tax and Treasury, Investor Relations, and Information Technology.

Mr. Miller joined PTC from Cepheid, a high-growth molecular diagnostics company, where he has served as Chief Financial Officer since April 2008. While at Cepheid, Miller built world-class finance and information technology teams and a nationally recognized investor relations program.

Mr. Miller's career also includes financial leadership positions at Autodesk, MarketFirst Software, Cadence Design Systems, and Silicon Graphics. In each role, he helped build and shape strong teams focused on financial strategy and operations. As the Vice President of Finance and Chief Accounting Officer of Autodesk, Mr. Miller was part of the team that drove their business transformation effort focused on corporate growth, productivity improvements, and profit expansion.

Mr. Miller began his career at accounting firm Deloitte. Mr. Miller serves on the Board of Directors of iRobot, a leader in delivering robotic technology-based solutions. Mr. Miller also served on the Board of Directors of United Online, a leading provider of consumer products and services over the internet, from July 2014 to July 2016.

Mr. Miller holds a BSC in accounting from Santa Clara University.

Barry F. Cohen, Ph.D. is the Chief Strategy Officer at PTC. In this position, Dr. Cohen drives strategy development and alignment across the Company. He is responsible for the Company's corporate strategy, corporate development and human resource organizations. Dr. Cohen also leads the Company's global academic programs and corporate marketing organizations.

Dr. Cohen joined PTC in January 1998 when PTC acquired Computervision. Prior to the acquisition, he served with Computervision for four years as senior vice president for human development and organizational productivity. Before joining Computervision, Dr. Cohen was the president of Possibilities Inc., an executive consulting firm specializing in organizational change and executive coaching, where he served for thirteen years.

Dr. Cohen has authored or co-authored several books on leadership and organizational change, including *The Wellness Sourcebook*, *Ethical Leadership*, *Leadership Myths and Realities*, and *The Possibilities Economy: New Capital Development*. He has also published many professional articles and a series of training manuals.

Dr. Cohen earned his doctorate in logic and philosophy of science from the State University of New York at Buffalo.

Matthew Cohen is the executive vice president of Customer Success at PTC. His team is focused on making sure the Company's clients realize full value from PTC solutions. In this position, he is responsible for the Company's success management, professional services, cloud services, technical support, and subscription and support renewal sales organizations.

Since joining PTC in 2001, Mr. Cohen has served in a series of leadership roles across the sales and services organizations. Within the Company's global services organization, Mr. Cohen has helped set sales, product and training strategy. He most recently led the Company's worldwide consulting and training lines of business and cloud strategy. Mr. Cohen also built and oversaw the rapid growth of the PTC University business.

Mr. Cohen earned a bachelor of arts in Psychology from Harvard University.

Kathleen Mitford is Executive Vice President, Products at PTC. In this role, Ms. Mitford is responsible for portfolio management, product strategy, and research development. She leads the Product and R&D organizations and is committed to further enhancing PTC's leadership role in the IoT and AR markets, complemented by its continued strength in core CAD and PLM offerings.

Ms. Mitford became our Executive Vice President, Products in February 2018. Ms. Mitford was our Executive Vice President, Products and Market Strategy from October 2017 to February 2018, Executive Vice President, Segments from February 2017 to October 2017, Corporate Vice President, Corporate Strategy from July 2014 to February 2017, and Senior Vice President, Corporate Strategy from October 2011 to July 2014. Before that, she served in various roles in our product, market and corporate strategy groups. Ms. Mitford joined PTC in 2006.

Ms. Mitford attended the Thomas Jefferson University in Philadelphia, PA, where she earned a bachelor of science.

Aaron C. von Staats is executive vice president, general counsel and secretary for PTC. In this position, Mr. von Staats is responsible for worldwide legal and compliance matters, including corporate governance, securities, compliance, mergers and acquisitions, intellectual property, technology licensing, litigation, employment, real estate and corporate subsidiary management.

Mr. von Staats was appointed PTC's General Counsel in 2003 after joining PTC in 1997. Prior to joining PTC, Mr. von Staats practiced as an associate with the Boston law firm Palmer & Dodge LLP. He began his legal career as a law clerk for the Honorable Paul J. Liacos, Chief Justice of the Massachusetts Supreme Judicial Court.

Mr. von Staats is a member of the Association of Corporate Counsel, the American Bar Association and the Boston Bar Association. He also serves as a board member of the not-for-profit organization City Year Boston and as a board member of the Arts & Business Council of Greater Boston.

Mr. von Staats earned a juris doctor from Boston College Law School and a bachelor of arts from the University of Massachusetts at Amherst.

7.3 Fraudulent Offenses and Bankruptcy, Etc.

For at least the previous five (5) years, none of the directors or executive officers of PTC has:

- (a) been convicted in relation to fraudulent offenses;
- (b) been associated with any bankruptcies, receiverships or liquidations when acting in their capacity of directors or executive officers of PTC; or
- (c) been subject to any official public incrimination and/or sanctions by statutory or regulatory authorities (including designated professional bodies) or ever been disqualified by a court from acting as a member of the administrative, management or supervisory bodies of an issuer or from acting in the management or conduct of the affairs of any issuer.

There is no family relationship between any of the executive officers and directors listed above.

7.4 Conflicts of Interest

Board Leadership Structure

Our Board is led by an independent Chairman, Mr. Schechter. We believe this Board leadership structure serves the company and our stockholders well by providing independent leadership of the Board. However, if we were to decide that combining the Chairman and Chief Executive Officer positions would better serve the company and our stockholders, our policy is to have a Lead Independent Director.

Severance and Change in Control Arrangements

Agreements and Conditions

We maintain severance and change in control arrangements with our executives. The agreements require the executive to execute a non-compete agreement with PTC and to execute a general release of claims as a condition to receiving severance benefits. Each of the agreements has a one-year term and renews automatically for successive one year terms if the Committee does not terminate the agreement. The agreements are described in more detail under Potential Payments upon Termination or Change in Control below.

Annual Review

The Committee reviews these agreements each year to determine if these agreements should be maintained, modified or terminated. For 2018, the Committee reviewed current market practices and the terms of the agreements with the Committee's compensation consultant. Based on this review, the Committee decided that it was appropriate to maintain the agreements.

Rationale

The Committee believes that these agreements are important motivational and retention tools because, in a time of increased consolidation in our industry and increased competition for executive talent, they provide a measure of earnings security by offering income protection in the form of severance and continued benefits if the executive's employment is terminated without cause, economic protection for the executive's family if the executive becomes disabled or dies, and additional protections in connection with a change in control of PTC.

The Committee believes that providing severance to PTC employees, including executives, is an appropriate bridge to subsequent employment if the person's employment is terminated without cause. This is particularly so for executive-level positions for which the opportunities are typically more limited

and the job search lead time is longer. The agreements also benefit PTC by enabling executives to remain focused on PTC's business in uncertain times without the distraction of potential job loss.

Importance in Connection with a Potential Change in Control

The Committee believes these agreements are even more important in the context of a change in control as it believes they will motivate and encourage the executives to be receptive to potential strategic transactions that are in the best interest of stockholders, even if the executive faces potential job loss. The agreements for our executives have "double triggers" before vesting of any equity is accelerated, so that no equity is accelerated upon a change in control, but is accelerated only if the executive is terminated in connection with a change in control. The Committee believes this benefits PTC and any potential acquirer because it enables PTC to retain and motivate the executive while a potential change in control is pending, provides an acquirer with the ability to retain desired executives using existing equity incentives, and does not provide a one-time benefit to the executive that could undermine those efforts.

Potential Payments upon Termination or Change in Control

We have agreements with our executive officers that provide the benefits described below in connection with certain terminations or a change in control of PTC. We describe our reasons for providing these benefits in Severance and Change in Control Arrangements above.

To receive the payments and benefits described in the first table entitled "Summary of Executive Agreement Terms - Compensation on Change-in-Control and Certain Terminations" on page 48 of the PTC 2018 Proxy Statement, the executive must execute a release of claims against PTC. The executive also must continue to comply with the material terms of his agreement and the terms of his Non-Disclosure, Non-Competition and Invention Agreement with PTC, which remains in effect after his termination of employment.

For information about the potential payments on termination or change in control had a termination event or a change-in-control occurred on September 30, 2017, please see pages 49 - 50 of the PTC 2018 Proxy Statement.

Transactions with Related Persons

Review of Transactions with Related Persons

We have a written policy regarding the review, approval and ratification of transactions involving related persons. Related persons include our directors, executive officers and persons or entities that beneficially own more than 5% of the outstanding Shares and their respective immediate family members as defined in applicable SEC regulations. Our Audit Committee is responsible for reviewing and approving or ratifying any related party transaction exceeding a specified threshold (unless such transaction involves the compensation of an executive officer whose compensation is reviewed and approved by the Committee). In reviewing such transactions, the Audit Committee considers whether:

- the transaction has an appropriate business purpose,
- the terms of the transaction are not less favorable to PTC than those that could be obtained from an unrelated third party,
- it is necessary or desirable for PTC to enter into the transaction at that time,
- the amount of consideration to be paid or received by PTC is appropriate, and
- entering into the transaction with the related person rather than an independent third party is desirable.

All related person transactions described below were reviewed and approved by the Audit Committee or the Committee in accordance with such policy.

Transactions with Related Persons

Matthew Cohen, our Executive Vice President of Customer Success, is the son of Barry Cohen, our Executive Vice President, Chief Strategy Officer. Matthew Cohen earned a salary of \$400,000, a performance bonus of \$350,000 and was granted \$1,111,170 worth of performance-based RSUs and \$775,000 worth of service-based RSUs for 2017, which RSUs vest in 2017, 2018 and 2019 to the extent the applicable performance and service-based criteria are met. As an executive officer, Matthew Cohen's compensation is established by the Committee and the amounts paid were commensurate with those of his peers.

Howard Heppelmann, our Divisional General Manager, Manufacturing Solutions, is the brother of James Heppelmann, our President and Chief Executive Officer. Howard Heppelmann is not an executive officer of PTC. Howard Heppelmann earned a salary of \$265,828, a performance bonus of \$150,525, medical and tax equalization benefits of \$12,739 and was granted \$224,960 worth of service-based RSUs for 2017, which RSUs vest in 2017, 2018 and 2019 to the extent the applicable service-based criteria are met. The amounts paid were commensurate with those of his peers.

VIII. EMPLOYEES

8.1 Directors' and Executive Officers' Holdings of Shares

The following table shows the Shares beneficially owned by PTC's current directors and named executive officers, as well as all current directors and executive officers as a group, as of November 29, 2018. The address of each stockholder listed in the following table is c/o PTC Inc., 140 Kendrick Street, Needham, Massachusetts 02494, U.S.A.

Director or Executive Officer	Number of Shares Beneficially Owned(1)	Percentage of Common Stock Outstanding(2)
Janice Chaffin	41,670	0.04%
Donald Grierson	51,784	0.04%
Phillip Fernandez	20,412	0.02%
Klaus Hoehn	25,011	0.02%
Paul Lacy	62,070	0.05%
Corinna Lathan	4,644	0.00%
Blake Moret	10,582,010 ⁽³⁾	8.92%
Robert Schechter	67,207	0.06%
James Heppelmann	713,098	0.61%
Andrew Miller	47,601	0.04%
Barry Cohen	55,002	0.05%
Matthew Cohen	59,485	0.05%
Kathleen Mitford	9,828	0.01%
All directors, nominees for director, and current executive officers as a group (14 persons)	11,763,119	9.89%

(1) Shares beneficially owned based on information available to us and applicable regulations. This does not constitute an admission by any stockholder that such stockholder beneficially owns the Shares listed. Unless otherwise indicated, each stockholder referred to above has sole voting and investment power over the Shares listed.

(2) For purposes of determining the percentage of Shares outstanding held by any person, the number of Shares deemed outstanding consists of the 118,675,240 Shares outstanding as of November 29, 2018, and any Shares subject to RSUs held by the person that vest on or before January 30, 2019.

(3) Mr. Moret joined the Board on July 19, 2018 and, accordingly, none of his equity has vested. The Shares shown are held directly by Rockwell Automation. Mr. Moret is the Chief Executive Officer and Chairman of the Board of Directors of Rockwell

Automation and, in these capacities, may be deemed to share voting and dispositive power with respect to the securities held by Rockwell Automation. Mr. Moret disclaims beneficial ownership of the securities held by Rockwell Automation, and the inclusion of these securities in the proxy statement shall not be deemed an admission by Mr. Moret of beneficial ownership of these shares for purposes of Section 16 or for any other purposes.

8.2 Employee Stock Benefit Plans

Our 2000 Equity Incentive Plan (“2000 Plan”) provides for grants of nonqualified and incentive stock options, Shares, restricted stock, RSUs and stock appreciation rights to employees, directors, officers and consultants. We award RSUs as the principal equity incentive awards, including certain performance-based awards that are earned based on achieving performance criteria established by the Committee on or prior to the grant date. Each RSU represents the contingent right to receive one Share.

The fair value of RSUs granted in 2018, 2017 and 2016 was based on the fair market value of our stock on the date of grant. The weighted average fair value per Share of RSUs granted in 2018, 2017 and 2016 was \$76.17, \$51.27 and \$37.25, respectively. In 2018 and 2017, the weighted average fair value per Share of restricted stock was increased by \$4.35 and \$2.27, respectively, by the additional shares earned for the 2016 TSR grant upon measurement on the vest date in 2017.

Beginning in the first quarter of 2018, we account for forfeitures as they occur, rather than estimate expected forfeitures.

The following table shows total stock-based compensation expense recorded from our stock-based awards as reflected in our Consolidated Statements of Operations included in the PTC 2018 Form 10-K:

	Year ended September 30,		
	2018	2017	2016
	(in thousands)		
Cost of license subscription revenue	\$ 1,801	\$ 1,379	\$ 805
Cost of support revenue	2,645	5,116	4,593
Cost of professional services revenue	7,079	6,116	5,393
Sales and marketing	24,893	15,373	14,659
Research and development	13,488	13,968	10,174
General and administrative	33,033	34,756	30,372
Total stock-based compensation expense	<u>\$ 82,939</u>	<u>\$ 76,708</u>	<u>\$ 65,996</u>

Stock-based compensation expense in 2018, 2017 and 2016 includes \$4.3 million, \$3.2 million, and \$0.4 million respectively, related to the ESPP. The stock-based compensation expense in 2016 included \$10 million of expense related to modifications of certain performance-based RSUs previously granted under our long-term incentive programs. The Committee amended these equity awards due to the impact of changes in our business model and strategy and foreign currency on our financial results.

As of September 30, 2018, total unrecognized compensation cost related to unvested RSUs expected to vest was approximately \$144.5 million and the weighted average remaining recognition period for unvested awards was 28 months.

As of September 30, 2018, 2.3 million Shares were available for grant under the 2000 Plan and 3.3 million Shares were reserved for issuance upon the exercise of stock options and vesting of RSUs granted and outstanding.

Our ESPP, initiated in the fourth quarter of 2016, allows eligible employees to contribute up to 10% of their base salary, up to a maximum of \$25,000 per year and subject to any other plan limitations, toward the purchase of the Shares at a discounted price. The purchase price of the Shares on each purchase date is equal to 85% of the lower of the fair market value of the Shares on the first and last trading days of

each offering period. The ESPP is intended to qualified under Section 423 of the U.S. Internal Revenue Code. We estimate the fair value of each purchase right under the ESPP on the date of grant using the Black-Scholes option valuation model and use the straight-line attribution approach to record the expense over the six-month offering period.

	Shares	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value as of September 30, 2018
RSU activity for the year ended September 30, 2018			
(in thousands except grant date fair value data)			
Balance of nonvested outstanding RSUs October 1, 2017	3,487	\$ 45.57	
Granted (1)	2,190	\$ 76.17	
Vested	(1,829)	\$ 43.91	
Forfeited or not earned	(564)	\$ 51.32	
Balance of nonvested outstanding RSUs September 30, 2018	<u>3,284</u>	<u>\$ 65.93</u>	\$ 348,638

- (1) Restricted stock granted includes approximately 184,000 Shares from prior period TSR awards that were earned upon achievement of the performance criteria and vested in November 2018.

RSU grants	RSUs	
	Performance-based RSUs (1)	Service-based RSUs (2)
	(Number of Units in thousands)	
Year ended September 30, 2018	961	1,045

- (1) Substantially all the performance-based RSUs were granted to our executive officers. Approximately 189,000 Shares are eligible to vest based upon annual performance measures, measured over a three-year period. RSUs not earned for a period may be earned in the third period. An additional 250,000 Shares are eligible to vest based upon a 2018 performance measure. To the extent earned, those performance-based RSUs will vest in three substantially equal installments on November 15, 2018, November 15, 2019 and November 15, 2020, or the date the Committee determines the extent to which the applicable performance criteria have been achieved for each performance period. An additional 500,000 shares are eligible to vest based upon annual performance measures, measured over a three-year period in fiscal years 2021, 2022 and 2023. RSUs not earned for a period may be earned in the third period.
- (2) The service-based RSUs were granted to employees, our executive officers and our directors. All service-based RSUs will vest in three substantially equal annual installments on or about the anniversary of the date of grant.

Until July 2005, we generally granted stock options. For those options, the option exercise price was typically the fair market value at the date of grant, and they generally vested over four years and expired ten years from the date of grant. There were no options outstanding and exercisable at September 30, 2018, 2017 and 2016.

	Year ended September 30,		
	2018	2017	2016
Value of stock option and stock-based award activity	(in thousands)		
Total intrinsic value of stock options exercised	\$ —	\$ —	\$ 88
Total fair value of RSU awards vested	\$ 127,525	\$ 78,573	\$ 63,655

In 2018, Shares issued upon vesting of RSUs were net of 0.7 million Shares retained by us to cover employee tax withholdings of \$45.4 million. In 2017, Shares issued upon vesting of RSUs were net of 0.5 million Shares retained by us to cover employee tax withholdings of \$26.7 million. In 2016, Shares issued upon vesting of restricted stock and RSUs were net of 0.6 million Shares retained by us to cover employee tax withholdings of \$20.9 million.

IX. WORKING CAPITAL STATEMENT

PTC believes that existing cash and cash equivalents, together with cash generated from operations and amounts available under its credit facility, will be sufficient to meet its working capital and capital expenditure requirements (which PTC expects to be \$40 million in 2019) (including debt service) through at least the next twelve months and to meet its known long-term capital requirements.

X. SELECTED FINANCIAL INFORMATION**10.1 Selected Financial Data**

The selected financial data of PTC set out in this prospectus are derived in part from and should be read in conjunction with Management's Discussion and Analysis of Financial Condition and Results of Operations, and PTC's Consolidated Financial Statements and its related notes thereto appearing respectively on pages 16 – 51 and F-3 – F-45 of the PTC 2018 Form 10-K. The Consolidated Financial Statements have been prepared in accordance with U.S. GAAP.

THREE-YEAR SUMMARY OF SELECTED FINANCIAL DATA (1)
(in thousands, except per share data)

	2018	2017	2016
Revenue	\$ 1,241,824	\$ 1,164,039	\$ 1,140,533
Gross margin	915,630	835,020	814,868
Operating income (loss) (2)	73,237	40,898	(37,014)
Net income (loss) (2)	51,987	6,239	(54,465)
Earnings (loss) per share—Basic (2)	0.45	0.05	(0.48)
Earnings (loss) per share—Diluted (2)	0.44	0.05	(0.48)
Total assets	2,329,022	2,360,384	2,345,729
Working capital	(101,495)	(12,353)	(11,930)
Long-term liabilities	719,154	796,039	848,544
Stockholders' equity	874,589	885,436	842,666

(1) The consolidated financial position and results of operations data reflect PTC's acquisitions of Kepware on January 12, 2016 for \$99.4 million in cash as well as certain other less significant businesses during these periods. Results of operations for the acquired businesses have been included in the Consolidated Statements of Operations included in the PTC 2018 Form 10-K since their acquisition dates.

(2) Operating income (loss) and net income (loss) in 2016 includes pre-tax restructuring charges of \$76.3 million.

10.2 Independent Registered Public Accounting Firm

The independent registered public accounting firm of PTC is PricewaterhouseCoopers LLP, Boston, Massachusetts, U.S.A. PricewaterhouseCoopers LLP is registered with the Public Company Accounting Oversight Board (United States) and is a member of the American Institute of Certified Public Accountants.

XI. DOCUMENTS ON DISPLAY

PTC makes available free of charge on its website at www.ptc.com the following reports as soon as reasonably practicable after electronically filing them with, or furnishing them to, the SEC: its Annual Reports on Form 10-K; its Quarterly Reports on Form 10-Q; its Current Reports on Form 8-K; and amendments to those reports filed or furnished pursuant to Sections 13(a) or 15(d) of the Securities

Exchange Act of 1934. PTC's Proxy Statements for its Annual Meetings and Section 16 trading reports on SEC Forms 3, 4 and 5 also are available on its website. PTC's Code of Ethics for Senior Executive Officers is embedded in its Code of Business Conduct and Ethics, which is also available on its website.

The SEC maintains a website that contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC at www.sec.gov.

The PTC 2018 Form 10-K and the PTC 2018 Proxy Statement referred to in this prospectus may be obtained free of charge upon request by an employee.

Note that PTC expects to issue, in mid to late January 2019, its earnings release for the quarter ending December 29, 2018. The quarterly report on Form 10-Q for such quarter is expected to be filed with the SEC no later than February 7, 2019. PTC expects to file with the SEC its 2019 Proxy Statement in January 2019. These documents will be available on the websites of PTC and the SEC indicated above.

XII. TAX CONSEQUENCES

12.1 France

The following summary is based on the income and social tax laws in effect in France as of the date of this prospectus. Tax laws are complex and can change frequently. As a result, the information below may be out of date at the time the Participant purchases Shares under the ESPP or when a Participant sells Shares. The following applies only to Participants who are tax residents of France. If a Participant is a citizen or resident of another country (or is considered as such for local law purposes), or transfers employment and/or residency to a different country after enrolling in the ESPP, the income and social tax information below may not be applicable. Furthermore, this information is general in nature and does not discuss all of the various laws, rules and regulations that may apply. It may not apply to each Participant's particular tax or financial situation, and the Company is not in a position to assure any Participant of any particular tax result. Participants should address any particular questions to a specialized advisor.

Enrollment in the ESPP

The Participant is not subject to tax when he or she enrolls in the ESPP or a new Offering Period begins.

Purchase of Shares

When Shares are purchased under the ESPP, a Participant will be subject to social security contributions on the difference between the fair market value of the Shares on the purchase date and the purchase price (the "discount"). A Participant will also be subject to personal income tax on the discount, after deduction of tax deductible social security contributions.

Sale of Shares

When a Participant subsequently sells the Shares acquired under the ESPP, the gain (*i.e.*, in principle, the difference between the net sale price and the fair market value of the Shares on the Purchase Date) will be subject to income tax and social taxes at a flat rate. Alternatively, the Participant may choose to be taxed at progressive income tax rates, in which case a portion of the social taxes will be tax deductible. However, such an election will be applied to all of the Participant's income and may thus, trigger unintended negative consequences.

Surtax on High Income

An additional 3% surtax applies on the portion of all types of income exceeding €250,000 (for single taxpayers) or €500,000 (for taxpayers jointly taxed), and a 4% surtax applies on the portion of income exceeding €500,000 (for single taxpayers) or €1,000,000 (for taxpayers jointly taxed). This surtax will

apply to all types of income (including the discount at purchase and any capital gain realized upon the sale of Shares). A surtax reduction is available under certain circumstances.

Withholding and Reporting

The Participant's employer will report the discount at purchase to the French tax and social security authorities and will withhold the relevant employee portion of the social insurance contributions due on the discount at purchase. Effective January 1, 2019, a new withholding tax system will be implemented in France, under which the employer will also withhold income tax due on the discount.

The Participant is responsible for reporting and paying any personal income tax, surtax (if applicable), and additional social taxes when he or she files his or her personal tax return.

French residents must declare any foreign bank, investment and brokerage accounts opened, used or closed during the applicable fiscal year to the French tax authorities, together with their personal tax return. In addition, French residents must declare the value of any cash or securities that are brought to France without the use of a financial institution to the French customs and excise authorities, if the value exceeds a certain threshold.

12.2 Germany

The following summary is based on the income and social tax laws in effect in Germany as of the date of this prospectus. Tax laws are complex and can change frequently. As a result, the information below may be out of date at the time Participant purchases Shares under the ESPP or when the Participant sells Shares. The following applies only to Participants who are tax residents of Germany. If a Participant is a citizen or resident of another country (or is considered as such for local law purposes), or transfers employment and/or residency to a different country after enrolling in the ESPP, the income and social tax information below may not be applicable. Furthermore, this information is general in nature and does not discuss all of the various laws, rules and regulations that may apply. It may not apply to each Participant's particular tax or financial situation, and the Company is not in a position to assure any Participant of any particular tax result. Participants should address any particular questions to a specialized advisor.

Enrollment in the ESPP

The Participant is not subject to tax when he or she enrolls in the ESPP or a new Offering Period begins.

Purchase of Shares

When Shares are purchased under the ESPP, the Participant will be subject to income tax at the Participant's personal income tax rate on the difference between the fair market value of the Shares on the purchase/transfer date and the purchase price (the "discount"). Further, the Participant will be subject to solidarity surcharge and church tax (if applicable) on the income tax owed on the discount.

The Participant will also be subject to social security contributions on the discount to the extent that the Participant's income has not yet exceeded the applicable income ceilings.

A small tax deduction of up to €360 per calendar year may be available pursuant to Section 3 No. 39 of the German Income Tax Act provided certain conditions are met. The Participant should consult with his or her personal tax advisor for further information regarding this deduction.

Sale of Shares

When the Participant subsequently sells the Shares acquired under the ESPP, the Participant may be subject to capital gains tax on any gain he or she realizes. The tax treatment for the Shares will depend on when the Participant acquired the Shares.

If the Participant sells Shares, any capital gain will be subject to income tax at a flat rate (plus solidarity surcharge and church tax, if applicable, on the flat rate tax), provided that the Participant does not own 1% or more of the Company's stated capital (and has not owned 1% or more at any time in the last five years) and the Shares are not held as business assets. The taxable amount will be the difference between the sale price and the fair market value of the Shares at purchase, less any costs the Participant incurs directly related to the sale of the Shares.

If the flat tax rate exceeds the Participant's personal income tax rate, the Participant may elect an assessment in order to have his or her personal income tax rate applied to the capital gain.

The Participant may deduct a lump-sum amount from the Participant's total capital gains from the sale of Shares and other income derived from capital investment earned in the relevant tax year.

The Participant will be responsible for declaring any capital gains he or she realizes upon the sale of Shares and paying applicable taxes due on such gains (unless the Participant's Shares are held by a German financial institution in a custodial account at the time of sale and the German financial institution withholds the applicable taxes due on the capital gains).

Withholding and Reporting

The Participant's employer will withhold income tax (plus solidarity surcharge and church tax, if applicable) and social security contributions (to the extent that the Participant's income has not already exceeded applicable ceilings) due on the discount at purchase and report and pay the income tax withheld to the German tax authorities for the month in which the purchase occurs.

Depending on the Participant's personal tax situation, the Participant may be required to file a tax return with the German tax authorities on which the Participant must report any income he or she realizes in connection with his or her participation in the ESPP. If applicable, the Participant is responsible for including the income realized under the ESPP in his or her annual tax return. Further, the Participant is responsible for paying any difference between the Participant's actual tax liability and the amount withheld by the Participant's employer.

12.3 Romania

The following summary is based on the income and social tax laws in effect in Romania as of the date of this prospectus. Tax laws are complex and can change frequently. As a result, the information below may be out of date at the time Participant purchases Shares under the ESPP or when the Participant sells Shares. The following applies only to Participants who are tax residents of Romania. If a Participant is a citizen or resident of another country (or is considered as such for local law purposes), or transfers employment and/or residency to a different country after enrolling in the ESPP, the income and social tax information below may not be applicable. Furthermore, this information is general in nature and does not discuss all of the various laws, rules and regulations that may apply. It may not apply to each Participant's particular tax or financial situation, and the Company is not in a position to assure any Participant of any particular tax result. Participants should address any particular questions to a specialized advisor.

Enrollment in the ESPP

The Participant likely is not subject to tax when he or she enrolls in the ESPP or a new Offering Period begins.

Purchase of Shares

When Shares are purchased under the ESPP, the Participant likely will be subject to income tax and social insurance contributions on the difference between the fair market value of the Shares on the purchase/transfer date and the purchase price (the "discount").

Sale of Shares

When the Participant subsequently sells the Shares purchased under the ESPP, the Participant will be subject to capital gains tax on any gain he or she realizes (*i.e.*, the difference between the sale price and the fair market value of the Shares at the time of purchase). Health contributions will not be due on any capital gains unless the Participant realized an annual income from independent activities, rental, agriculture, investments (including sale of Shares and/or dividends), partnerships with legal entities and/or income from other sources, of at least 12 monthly minimum gross salaries.

Withholding and Reporting

The Participant's employer may be required to withhold or report income tax and social insurance contributions on the discount at purchase. The Participant will be responsible for paying any applicable income tax and social insurance contributions directly to the National Agency for Fiscal Administration.

12.4 United Kingdom

The following summary is based on the income and social tax laws in effect in the United Kingdom as of the date of this prospectus. Tax laws are complex and can change frequently. As a result, the information below may be out of date at the time the Participant purchases Shares under the ESPP or when the Participant sells Shares. The following applies only to Participants who are resident and domiciled in the United Kingdom. If a Participant is a citizen or resident of another country (or is considered as such for local law purposes), or transfers employment and/or residency to a different country after enrolling in the ESPP, the income and social tax information below may not be applicable. Furthermore, this information is general in nature and does not discuss all of the various laws, rules and regulations that may apply. It may not apply to each Participant's particular tax or financial situation, and the Company is not in a position to assure any Participant of any particular tax result. Participants should address any particular questions to a specialized advisor.

Enrollment in the ESPP

The Participant is not subject to tax when he or she enrolls in the ESPP or a new Offering Period begins.

Purchase of Shares

When Shares are purchased under the ESPP, the Participant will be subject to income tax and employee national insurance contributions ("NICs") on the difference between the fair market value of the Shares on the purchase date and the Purchase Price (the "discount").

Sale of Shares

When the Participant subsequently sells the Shares acquired under the ESPP, any capital gain (*i.e.*, the difference between the sale price and base cost of the Shares for tax purposes) will be subject to capital gains tax. However, capital gains tax is payable only if the Participant's total annual capital gain exceeds the annual exemption amount.

In general, the base cost of Shares will be equal to the fair market value of the Shares at the time of purchase. However, the Participant must consider the share identification rules to determine the relevant base cost when calculating his/her capital gains. The Participant should consult with his/her personal tax advisor for additional details.

Withholding and Reporting

The Participant's employer will report the discount as income to the Participant and withhold income tax and employee NICs due on the discount when Shares are purchased under the ESPP. It is the

Participant's responsibility to report any income from the sale of Shares and to pay any applicable taxes due on such income.

EXHIBIT

EXHIBIT I
PTC INC.
2016 EMPLOYEE STOCK PURCHASE PLAN



**PTC INC.
2016 EMPLOYEE STOCK PURCHASE PLAN**

1. Purpose.

This 2016 Employee Stock Purchase Plan (the "Plan") is adopted by PTC Inc. (the "Company") to provide Eligible Employees who wish to become shareholders of the Company an opportunity to purchase shares of Common Stock, par value \$.01 per share, of the Company ("Common Stock"). The Plan is intended to qualify as an "employee stock purchase plan" under Section 423 of the Internal Revenue Code of 1986, as amended (the "Code"), and the provisions of the Plan shall be construed so as to extend and limit participation in a manner consistent with the requirements of Section 423; provided that, if and to the extent authorized by the Board, the fact that the Plan does not comply in all respects with the requirements of Section 423 shall not affect the operation of the Plan or the rights of Employees hereunder.

2. Certain Definitions.

As used in this Plan:

(a) "Board" means the Board of Directors of the Company, and "Committee" means the Compensation Committee of the Board or such other committee as the Board may appoint from time to time to administer the Plan.

(b) "Compensation" means the base wages paid to an Employee by the Company or a Subsidiary in accordance with established payroll procedures.

(c) "Coordinator" means the officer of the Company or other person charged with day-to-day supervision of the Plan as appointed from time to time by the Board or the Committee.

(d) "Eligible Employee" with respect to any Offering hereunder means any Employee who, as of the Offering Commencement Date for such Offering:

(i) is a Full-Time Employee of the Company or any of its Subsidiaries; and

(ii) would not, immediately after any right to acquire Shares in such Offering is granted, own stock or rights to purchase stock possessing five percent (5%) or more of the total combined voting power or value of all classes of stock of the Company or of any subsidiary corporation, determined in accordance with Section 423.

(e) "Employee" means an employee (as that term is used in Section 423) of the Company or any of its Subsidiaries. Employees shall not include individuals classified as independent contractors.

(f) "Exercise Price" means the purchase price of a share of Common Stock hereunder as provided in Section 6 below.

(g) "Fair Market Value" of a Share means, as of any date, the value of Common Stock determined as follows:

(i) If the Common Stock is listed on any established stock exchange, Fair Market Value shall be the closing sales price for such stock (or the closing bid, if no sales were reported) on such exchange (or, if more than one, the principal exchange) on the date of determination, as reported by such exchange;

(ii) If the Common Stock is not listed on any established stock exchange but is traded over the counter, Fair Market Value shall be the mean of the closing bid and asked prices for the Common Stock on the date of determination as reported in The Wall Street Journal or such other source as the Committee deems reliable; or

(iii) In the absence of an established market for the Common Stock, Fair Market Value shall be determined in good faith by the Committee.

(h) "Full-Time Employee" is an Employee whose customary employment is for more than (i) 20 hours per week and (ii) five months, in the calendar year during which the respective Offering Commencement Date occurs.

(i) "Offering" is an offering of Shares pursuant to Section 5 of the Plan.

(j) "Offering Commencement Date" means the date on which an Offering under the Plan commences, and "Offering Termination Date" means the date on which an Offering under the Plan terminates.

(k) "Participant" means an Eligible Employee who elects to participate in the Plan.

(l) "Purchase Date" means each date on which the rights granted under the Plan may be exercised for the purchase of Shares.

(m) "Option" means the right to purchase Shares pursuant to the Plan during each Offering.

(n) "Section 423" and subdivisions thereof refer to Section 423 of the Code or any successor provision(s).

(o) "Shares" means the shares of Common Stock issuable under the Plan.

(p) "Subsidiary" means a subsidiary corporation, as defined in Section 424 of the Code, of the Company the Employees of which are designated by the Board of Directors or the Committee as eligible to participate in the Plan.

3. Administration of the Plan.

The Committee shall administer, interpret and apply all provisions of the Plan as it deems necessary or appropriate, subject, however, at all times to the final jurisdiction of the Board of Directors. The Committee shall have full power and authority to promulgate any rules and regulations which it deems necessary for the proper administration of the Plan. The Board may in any instance perform any of the functions of the Committee hereunder. The Committee may delegate administrative responsibilities to the Coordinator, who shall, for matters involving the Plan, be an ex officio member of the Committee. Determinations made by the Committee and approved by the Board of Directors with respect to any provision of the Plan or matter arising in connection therewith shall be final, conclusive and binding upon the Company and upon all participants, their heirs or legal representatives. The Company shall pay all expenses incurred in the administration of the Plan. No member of the Board or Committee shall be liable for any action or determination made in good faith with respect to the Plan.

4. Shares Subject to the Plan.

(a) Subject to adjustment as set forth herein, the maximum aggregate number of Shares that may be purchased upon exercise of Options granted under the Plan shall be 2,000,000. Shares made available for sale under the Plan may be authorized but unissued stock or reacquired stock, as the Committee shall determine.

(b) Appropriate adjustments in such amount, the number of Shares covered by outstanding Options granted hereunder, the securities that may be purchased hereunder, the Exercise Price, and the maximum number of Shares or other securities that an employee may purchase (pursuant to Section 8 below) shall be made to give effect to any mergers, consolidations, reorganizations, recapitalizations, stock splits, stock dividends or other relevant changes in the capitalization of the Company occurring after the effective date of the Plan; provided that any fractional Share otherwise issuable hereunder as a result of such an adjustment shall be adjusted downward to the nearest full Share.

(c) In the event of a consolidation or merger in which the Company is not the surviving corporation or in the event of the sale or transfer of substantially all the Company's assets, all outstanding rights to purchase Shares will terminate, provided that prior to the effective date of any such merger, consolidation or sale of assets, the Committee may, in its sole discretion (i) refund all accumulated payroll deductions and cancel all outstanding Options, or (ii) accelerate the Purchase Date to a date established by the Board on or before the date of consummation of such merger, consolidation or sale, and all outstanding Options will be exercised on such date, or (iii) if there is a surviving corporation or acquiring corporation, arrange to have that corporation or an affiliate of such corporation assume the Options or grant to the participants an equivalent Option having equivalent terms and conditions as determined by the Committee.

(d) If for any reason any Option under the Plan terminates in whole or in part, Shares subject to such terminated Option may again be subjected to an Option under the Plan.

5. Offerings; Participation.

(a) From time to time, the Company, by action of the Committee, will grant an Option to purchase Shares to Eligible Employees pursuant to one or more Offerings; provided that the Committee may establish administrative rules requiring that an Eligible Employee be employed by the Company or any of its Subsidiaries for a minimum period prior to the Offering Commencement Date to be eligible to participate with respect to the Offering beginning on that Offering Commencement Date. Each Offering shall have an Offering Commencement Date, an Offering Termination Date, and one or more Purchase Dates as designated by the Committee. No Offering may last longer than twenty-seven (27) months or such longer period as may then be consistent with Section 423. The Committee may limit the number of Shares issuable in any Offering, either before or during such Offering; provided, however, that in no event may a Participant purchase more than 1,500 Shares in any one Offering.

(b) Participation in each Offering shall be limited to Eligible Employees (in accordance with any administrative rules established by the Committee) who elect to participate in such Offering in the manner, and within the time limitations, established by the Committee. No person otherwise eligible to participate in any Offering under the Plan shall be entitled to participate if he or she has elected not to participate. Any such election not to participate may be revoked only with the consent of the Committee. A Participant may elect to have payroll deductions made on each pay day or other contributions (to the extent permitted by the Committee) made during the Offering Period in an amount not exceeding ten percent (10%) of the Compensation which the Participant receives for the year. Amounts deducted from Participant's Compensation by payroll deduction shall be credited to a separate bookkeeping account established and maintained by the Company in the name of each Participant. No interest shall be paid upon payroll deductions or other amounts held hereunder (whether or not used to purchase Shares) unless specifically provided for by the Committee. All payroll deductions and other amounts received or held by the Company under this Plan may be used by the Company for any corporate purpose, and the Company shall not be obligated to segregate such amounts.

(c) A Participant who has elected to participate in an Offering may make such changes in the level of payroll deductions as the Committee may permit from time to time, or may withdraw from such Offering, by giving written notice to the Company before any Purchase Date. No Participant who has withdrawn from participating in an Offering may resume participation in the same Offering, but he or she may participate in any subsequent Offering if otherwise eligible.

(d) Upon termination of a Participant's employment for any reason, including retirement, disability or death, while in the employ of the Company or a Subsidiary, such Participant will be deemed to have withdrawn from participation in all pending Offerings.

(e) Notwithstanding any provisions in the Plan to the contrary, the Committee may allow Eligible Employees to participate in the Plan through cash, check or other means instead of payroll deductions if payroll deductions are not permitted under applicable local law.

6. Exercise Price.

The Exercise Price for each Option shall be eighty-five percent (85%) of the Fair Market Value of a Share on (a) the respective Offering Commencement Date or (b) the respective Purchase Date, whichever is lower; provided, however, that the Committee may change the Exercise Price with respect to any Offering.

7. Exercise of Options; Method of Payment.

(a) Subject to any applicable limitation on purchases under the Plan, and unless the Participant has previously withdrawn from the respective Offering, Options granted to a Participant will be exercised automatically on the Purchase Date of the respective Offering coinciding with the Offering Termination Date, for the purchase of the number of whole Shares that may be purchased at the applicable Exercise Price with the accumulated payroll deductions or other amounts contributed by such Participant as of the respective Purchase Date. Fractional Shares will not be issued under the Plan, and any amount that would otherwise have been applied to the purchase of a fractional Share shall be repaid to the Participant within a reasonable time thereafter. The Company will deliver to each Participant the shares of Common Stock purchased within a reasonable time after the Purchase Date using such means as may be determined by the Committee.

(b) Any amounts withheld from the Participant's Compensation or contributed by Participant that are not used for the purchase of Shares, whether because of such Participant's withdrawal from participation in an Offering (voluntarily, upon termination of employment, or otherwise) or for any other reason, shall be repaid to the Participant or his or her Designated Beneficiary or legal representative, as applicable, within a reasonable time thereafter.

(c) The Company's obligation to offer, sell and deliver Shares under the Plan at any time is subject to (i) the approval of any governmental authority required in connection with the authorized issuance or sale of such Shares, (ii) satisfaction of the listing requirements of any national securities exchange or securities market on which the Common Stock is then listed, and (iii) compliance, in the opinion of the Company's counsel, with all applicable federal and state securities and other laws.

8. Limitations on Purchase Rights.

(a) Any provision of the Plan or any other employee stock purchase plan of the Company or any subsidiary (collectively, "Other Plans") to the contrary notwithstanding, no Eligible Employee shall be granted an option to purchase Common Stock (or other stock of the Company and any subsidiary) under the Plan and all Other Plans at a rate that exceeds an aggregate of \$25,000 (or such other maximum as may be prescribed from time to time by Section 423) in Fair Market Value of such stock (determined at the time the rights are granted) for each calendar year in which any such right is outstanding.

(b) An Eligible Employee's participation in any one or a combination of Offerings under the Plan shall not exceed such additional limits as the Committee may from time to time impose.

9. Sub-Plans.

The Committee may adopt “sub-plans” separate from this Plan for purposes of Section 423 which permit grants of Options to employees of the Company and its Subsidiaries which are not intended to satisfy the requirements of Section 423. Notwithstanding the foregoing, the Shares issued under any sub-plan will be aggregated with the Shares issued under this Plan, and such aggregate number of Shares shall be subject to the maximum number set forth in Section 4 hereof. The terms of each sub-plan may take precedence over other provisions of this document, with the exception of Sections 4, 13 and 15, but unless otherwise superseded by the terms of such sub-plan, the provisions of this Plan shall govern the operation of such sub-plan.

10. Tax Withholding.

Each Participant shall pay to the Company or the applicable Subsidiary, or make provision satisfactory to the Committee for payment of, any taxes required by law to be withheld in respect of the purchase or disposition of Shares no later than the date of the event creating the tax liability. In the Committee’s discretion and subject to applicable law, such tax obligations may be paid in whole or in part by delivery of Shares to the Company, including Shares purchased under the Plan, valued at Fair Market Value on the date of delivery. The Company or the applicable Subsidiary may, to the extent permitted by law, deduct any such tax obligations from any payment of any kind otherwise due to the Participant or withhold Shares purchased hereunder, which shall be valued at Fair Market Value on the date of withholding.

11. Participants’ Rights as Shareholders and Employees.

(a) No Participant shall have any rights as a shareholder in the Shares covered by an Option granted hereunder until such right has been exercised, full payment has been made for such Shares, and the Shares are actually issued.

(b) Each Employee is an employee-at-will (that is to say that either the Employee or the Company or any Subsidiary may terminate the employment relationship at any time for any reason or no reason at all) unless and only to the extent provided in a written employment agreement for a specified term executed by an authorized signatory of the Company or any Subsidiary. Neither the adoption, maintenance, nor operation of the Plan nor any grant of rights hereunder shall confer upon any Employee any right with respect to the continuance of such Employee’s employment with the Company or any Subsidiary nor shall they interfere with the rights of the Company or Subsidiary to terminate any Employee at any time or otherwise change the terms of employment, including, without limitation, the right to promote, demote or otherwise re-assign any Employee from one position to another within the Company or any Subsidiary.

12. Options Not Transferable.

Options granted under the Plan are not assignable or transferable by a Participant other than by will or the laws of descent and distribution and, during the Participant’s lifetime, are exercisable only by the Participant. The Company may treat any attempted *inter vivos* assignment as an election to withdraw from all pending Offerings.

13. Amendments to or Termination of the Plan.

The Board shall have the right to amend, modify or terminate the Plan at any time without notice, subject to any stockholder approval that the Board determines to be necessary or advisable; provided that the rights of Participants hereunder with respect to any ongoing or completed Offering shall not be adversely affected.

14. Governing Law.

Subject to overriding federal law, the Plan shall be governed by and interpreted consistently with the laws of the Commonwealth of Massachusetts.

15. Effective Date and Term.

This Plan will become effective on February 1, 2016. This Plan will continue until the earlier to occur of (a) termination of this Plan by the Board or (b) issuance of all of the Shares reserved for issuance under the Plan.

CROSS-REFERENCE LISTS

ANNEX I

**MINIMUM DISCLOSURE REQUIREMENTS FOR THE SHARE REGISTRATION DOCUMENT
(SCHEDULE)**

(Page numbering refers to the page contained in the relevant document)

Item #	Item contents	Chapter/Exhibit	Page/Section
1.	PERSONS RESPONSIBLE		
1.1.	All persons responsible for the information given in the prospectus.	Prospectus	4 (Company Representative for Prospectus)
1.2.	A declaration by those responsible for the prospectus.	Prospectus	4 (Company Representative for Prospectus)
2.	STATUTORY AUDITORS		
2.1.	Name and address of the issuer's auditors.	Part II - Section B	50 (10.2 Independent Registered Public Accounting Firm)
2.2.	If auditors have resigned, been removed or not been re-appointed during the period covered by the historical financial information, indicate details if material.	Not applicable	Not applicable
3.	SELECTED FINANCIAL INFORMATION		
3.1.	Selected historical financial information.	Part II - Section B	50 (10.1 Selected Financial Data)
3.2.	Interim periods.	Not applicable	Not applicable
4.	RISK FACTORS	Part II - Section A	17 - 29 (Risk Factors)
5.	INFORMATION ABOUT THE ISSUER		
5.1.	History and Development of the Issuer		
5.1.1.	The legal and commercial name of the Issuer	Part I - Section B	5 (B.1 Legal and Commercial Name of the Issuer)

Item #	Item contents	Chapter/Exhibit	Page/Section
12.	TREND INFORMATION		
12.1.	Significant trends that affected production, sales and inventory, and costs and selling prices since the end of the last financial year to the date of the prospectus.	Part I - Section B	7 - 10 (B.4a Recent Trends)
12.2.	Trends, uncertainties or events that are likely to affect the issuer for at least the current financial year.	Part I - Section B	7 - 10 (B.4a Recent Trends)
		Part II - Section A	17 - 29 (Risk Factors)
13.	PROFIT FORECASTS OR ESTIMATES	Not applicable	Not applicable
14.	ADMINISTRATIVE, MANAGEMENT, SUPERVISORY BODIES AND SENIOR MANAGEMENT		
14.1	Names, business addresses and functions in the issuer of the following persons and an indication of the principal activities performed by them outside the issuer where these are significant with respect to that issuer: a) members of the administrative, management or supervisory bodies;	Part II - Section B	39 - 43 (7.1 Board of Directors as of November 29, 2018) and 47 - 48 (8.1 Directors' and Executive Officers' Holdings of Shares)
	b) partners with unlimited liability, in the case of a limited partnership with a Share capital; (not applicable);	Not applicable	Not applicable
	c) founders, if the issuer has been established for fewer than five years; and (not applicable);	Not applicable	Not applicable
	d) any senior manager who is relevant to establishing that the issuer has the appropriate expertise and experience for the management of the issuer's business.	Part II - Section B	43 - 44 (7.2 Executive Officers as of November 29, 2018) and 47 - 48 (8.1 Directors' and Executive Officers' Holdings of Shares)
	The nature of any family relationship between any of those persons.	Part II - Section B	45 (7.3 Fraudulent

Item #	Item contents	Chapter/Exhibit	Page/Section
	<p>In the case of each member of the administrative, management or supervisory bodies of the issuer and each person mentioned in points (b) and (d) of the first subparagraph, details of that person’s relevant management expertise and experience and the following information:</p> <p>(a) the nature of all companies and partnerships of which such person has been a member of the administrative, management and supervisory bodies or partner at any time in the previous five years, indicating whether or not the individual is still a member of the administrative, management or supervisory bodies or partner. It is not necessary to list all the subsidiaries of an issuer of which the person is also a member of the administrative, management or supervisory bodies or partner. It is not necessary to list all the subsidiaries of an issuer of which the person is also a member of the administrative, management or supervisory bodies;</p> <p>(b) any convictions in relation to fraudulent offenses for at least the previous five years;</p> <p>(c) details of any bankruptcies, receiverships or liquidations with which a person described in (a) and (d) of the first subparagraph who was acting in the capacity of any of the positions set out in (a) and (d) of the first subparagraph was associated for at least the previous five years;</p> <p>(d) details of any official public incrimination and/or sanctions of such person by statutory or regulatory authorities (including designated professional bodies) and whether such person has ever been disqualified by a court from acting as a member of the administrative, management or supervisory bodies of an issuer or from acting in the management or conduct of the affairs of any issuer for at least the previous five years.</p> <p>If there is no such information to be disclosed, a statement to that effect is to be made.</p>	<p>Part II - Section B</p> <p>Part II - Section B</p>	<p>Offenses and Bankruptcy, Etc.)</p> <p>39 - 43 (7.1 Board of Directors as of November 29, 2018) and</p> <p>43 - 44 (7.2 Executive Officers as of November 29, 2018)</p> <p>45 (7.3 Fraudulent Offenses and Bankruptcy, Etc.)</p>
14.2.	Administrative, management, and supervisory bodies and senior management conflicts of interests.	Part II - Section B	45 - 47 (7.4 Conflicts of Interest)
17.	EMPLOYEES		

CROSS-REFERENCE LISTS

Item #	Item contents	Chapter/Exhibit	Page/Section
17.2.	Shareholdings and stock options with respect to each person referred to in points (a) and (d) of the first subparagraph of item 14.1.	Part II - Section B	47 - 48 (8.1 Directors' and Executive Officers' Holdings of Shares)
17.3	Description of any arrangements for involving the employees in the capital of the issuer.	Exhibit I	All sections
		Part II - Section B	48 - 49 (8.2 Employee Stock Benefit Plans)
20.7.	Dividend policy		
20.7.1	The amount of the dividend per Share for each financial year for the period covered by the historical financial information.	Part II - Section B	33 (4.5 Rights Attached to the Securities - Dividend Rights)
20.8.	Legal and arbitration proceedings.	Part II - Section B	37 - 38 (5.3 Indirect and Contingent Indebtedness - Legal and Regulatory Matters)
20.9.	Significant change in the issuer's financial or trading position since the end of the last financial period.	Not applicable	Not applicable
23.	THIRD PARTY INFORMATION AND STATEMENT BY EXPERTS AND DECLARATIONS OF ANY INTEREST		
23.1.	Where a statement or report attributed to a person as an expert is included in the Registration Document, provide such person's name, business address, qualifications and material interest if any in the issuer.	Not applicable	Not applicable
23.2.	Where information has been sourced from a third party, provide a confirmation that this information has been accurately reproduced.	Not applicable	Not applicable
24.	DOCUMENTS ON DISPLAY	Part II - Section B	50 - 51 (XI. Documents on Display)

ANNEX III

MINIMUM DISCLOSURE REQUIREMENTS FOR THE SHARE SECURITIES NOTE (SCHEDULE)

(Page numbering refers to the page contained in the relevant document)

Item #	Item contents	Chapter/Exhibit	Page/Section
1.	PERSONS RESPONSIBLE		
1.1.	All persons responsible for the information given in the prospectus.	Prospectus	4 (Company Representative for Prospectus)
1.2.	A declaration by those responsible for the prospectus.	Prospectus	4 (Company Representative for Prospectus)
2.	RISK FACTORS	Part II - Section A	17 - 29 (Risk Factors)
		Part II - Section B	33 (4.4. Currency of the Securities Issue, sentence beginning "Participants assume the risk (...)") 34 (4.6 Transferability, sentence beginning "Participants assume the risk (...)")
3.	KEY INFORMATION		
3.1	Working capital statement	Part II - Section B	50 (IX. Working Capital Statement)
3.2	Capitalization and indebtedness	Part II - Section B	35 - 38 (V. Statement of Capitalization and Indebtedness as of September 30, 2018)
3.4	Reasons for the offer and use of proceeds	Part II - Section B	29 (1.1 Purpose)

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Item #	Item contents	Chapter/Exhibit	Page/Section
			of the ESPP) and 39 (6.2 Net Proceeds)
		Exhibit I	Section 1 (Purpose)
4.	INFORMATION CONCERNING THE SECURITIES TO BE OFFERED/ ADMITTED TO TRADING		
4.1	Type and the class of the securities being offered, including the security identification code.	Part II - Section B	32 (4.1 Type and the Class of the Securities Being Offered, Including the Security Identification Code)
		Exhibit I	Section 4 (Shares Subject to the Plan)
4.2	Legislation under which the securities have been created.	Part II - Section B	32 (4.2 Legislation Under Which the Securities Have Been Created)
4.3	Form of securities, name and address of the entity in charge of keeping the records.	Part II - Section B	32 - 33 (4.3 Form of Securities, Name and Address of the Entity in Charge of Keeping the Records)
4.4	Currency of the securities issue.	Part II - Section B	33 (4.4 Currency of the Securities Issue)
4.5	Rights attached to the securities	Part II - Section B	33 - 34 (4.5 Rights attached to the Securities)
4.6	Statement of the resolutions, authorizations and approvals by virtue of which the securities have been or will be created and/or issued.	Part II - Section B	29 (1.2 Shares Offered under the ESPP)
		Exhibit I	Section 1 (Purpose)

Item #	Item contents	Chapter/Exhibit	Page/Section
4.7	Expected issue date of the securities.	Part II - Section B	30 (1.3 Purchase Period) and 31 - 32 (III. Delivery and Sale of the Shares)
4.8	Description of any restrictions on the free transferability of the securities.	Part II - Section B	34 (4.6 Transferability)
		Exhibit I	Section 12 (Options Not Transferable)
4.9	Mandatory takeover bids and/or squeeze-out and sell-out rules in relation to the securities.	Part II - Section B	34 - 35 (4.7 General Provisions Applying to Business Combinations)
4.11	Information on taxes on the income from the securities withheld at source	Part II - Section B	51 - 55 (XII. Tax Consequences)
5.	TERMS AND CONDITIONS OF THE OFFER		
5.1	Conditions, offer statistics, expected timetable and action required to apply for the offer		
5.1.1	Conditions to which the offer is subject.	Part II - Section B	29 - 32 (I. The Outline, II. Eligibility and III. Delivery and Sale of the Shares)
		Exhibit I	All sections
5.1.2	Total amount of the issue/offer.	Part II - Section B	29 (1.2 Shares Offered under the ESPP)
		Exhibit I	Section 4 (Shares Subject to the Plan)
5.1.3	Time period during which the offer will be open and description of the application process.	Part II - Section B	31 (2.2 Participation of Eligible Employees)

CROSS-REFERENCE LISTS

Item #	Item contents	Chapter/Exhibit	Page/Section
		Exhibit I	Section 5 (Offerings; Participation)
5.1.4	Circumstances under which the offer may be revoked or suspended and whether revocation can occur after dealing has begun.	Part II - Section B	30 (1.7 Termination or Amendment of the ESPP)
		Exhibit I	Section 5 (Offerings; Participation) Section 13 (Amendments to or Termination of the Plan)
5.1.5	Possibility to reduce subscriptions and the manner for refunding excess amount paid by applicants.	Part II - Section B	31 (2.4 Discontinuance of Participation of Participants)
		Exhibit I	Section 5 (Offerings; Participation)
5.1.6	Minimum and /or maximum amount of application.	Part II - Section B	31 (2.3 Payroll Deductions)
		Exhibit I	Section 5 (Offerings; Participation) Section 8 (Limitations on Purchase Rights)
5.1.7	Period during which an application may be withdrawn.	Part II - Section B	31 (2.4 Discontinuance of Participation of Participants)
5.1.8	Method and time limits for paying up the securities and for delivery of the securities.	Part II - Section B	29 - 30 (1.2 Shares Offered Under the ESPP to 1.5 Purchase of Shares)

Item #	Item contents	Chapter/Exhibit	Page/Section
		Exhibit I	Section 7 (Exercise of Options; Method of Payment)
5.3	Pricing		
5.3.1.	An indication of the price at which the securities will be offered.	Part II - Section B	30 (1.4 Purchase Price)
		Exhibit I	Section 6 (Exercise Price)
5.3.2.	Process for the disclosure of the offer price.	Part II - Section B	32 - 33 (4.3 Form of Securities, Name and Address of the Entity in Charge of Keeping the Records)
		Exhibit I	Section 6 (Exercise Price)
5.3.3.	If the issuer's equity holders have pre-emptive purchase rights and this right is restricted or withdrawn.	Part II - Section B	34 (4.5 Rights Attached to the Securities - No Preemptive, Redemptive or Conversion Provisions)
5.3.4	Where there is or could be a material disparity between the public offer price and the effective cash cost to members of the administrative, management or supervisory bodies or senior management, or affiliated persons, of securities acquired by them in transactions during the past year.	Not applicable	Not applicable
5.4.	Placing and Underwriting		
5.4.2	Name and address of any paying agents and depository agents in each country.	Part II - Section B	32 - 33 (4.3 Form of Securities, Name and Address of the Entity in Charge of Keeping the Records)
6.	ADMISSION TO TRADING AND DEALING ARRANGEMENTS		

CROSS-REFERENCE LISTS

Item #	Item contents	Chapter/Exhibit	Page/Section
6.1	Whether the securities offered are or will be the object of an application for admission to trading.	Part II - Section B	32 (4.1 Type and the Class of the Securities Being Offered, Including the Security Identification Code)
6.2	Regulated markets or equivalent markets on which securities of the same class of the securities to be offered or admitted to trading are already admitted to trading.	Part II - Section B	32 (4.1 Type and the Class of the Securities Being Offered, Including the Security Identification Code)
8.	EXPENSE OF THE ISSUE/OFFER		
8.1.	The total net proceeds and an estimate of the total expenses of the issue/offer.	Part II - Section B	39 (6.2 Net Proceeds)
9.	DILUTION		
9.1.	The amount and percentage of immediate dilution resulting from the offer.	Part II - Section B	38 - 39 (6.1 Maximum Dilution)
9.2.	In the case of a subscription offer to existing equity holders, the amount and percentage of immediate dilution if they do not subscribe to the new offer.	Not applicable	Not applicable
10.	ADDITIONAL INFORMATION		
10.1.	If advisors connected with an issue are mentioned in the Securities Note, a statement of the capacity in which the advisors have acted.	Not applicable	Not applicable
10.3.	Where a statement or report attributed to a person as an expert is included in the Securities Note, provide such persons' name, business address, qualifications and material interest if any in the issuer.	Not applicable	Not applicable
10.4.	Where information has been sourced from a third party.	Not applicable	Not applicable