

MODEL N, INC.  
Form 10-K  
November 16, 2018

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
Washington, D.C. 20549

FORM 10-K

(Mark One)

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934  
For the fiscal year ended September 30, 2018

OR

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT  
OF 1934 FOR THE TRANSITION PERIOD FROM TO

Commission File Number 001-35840

Model N, Inc.

(Exact name of Registrant as specified in its Charter)

Delaware	77-0528806
( State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)
777 Mariners Island Boulevard, Suite 300 San Mateo, California	94404
(Address of principal executive offices)	(Zip Code)
Registrant's telephone number, including area code: (650) 610-4600	

Securities registered pursuant to Section 12(b) of the Act: Common Stock, Par Value \$0.00015 Per Share; Common stock traded on the New York Stock Exchange stock market

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

Indicate by check mark if the Registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. YES NO

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or 15(d) of the Act. YES NO

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405) is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K.

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

Large accelerated filer Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). YES NO

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant, based on the closing price of the shares of common stock on The New York Stock Exchange Stock Market on March 31, 2018, was approximately \$471 million.

The number of shares of Registrant's Common Stock outstanding as of November 2, 2018 was 31,447,507. Portions of the Registrant's Definitive Proxy Statement relating to the Annual Meeting of Shareholders, scheduled to be held on February 15, 2019, are incorporated by reference into Part III of this Report.

---

## TABLE OF CONTENTS

	Page
PART I	
Item 1. Business	<u>2</u>
Item 1A. Risk Factors	<u>9</u>
Item 1B. Unresolved Staff Comments	<u>28</u>
Item 2. Properties	<u>28</u>
Item 3. Legal Proceedings	<u>29</u>
Item 4. Mine Safety Disclosures	<u>29</u>
PART II	
Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	<u>29</u>
Item 6. Selected Consolidated Financial Data	<u>30</u>
Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations	<u>33</u>
Item 7A. Quantitative and Qualitative Disclosures About Market Risk	<u>52</u>
Item 8. Consolidated Financial Statements and Supplementary Data	<u>53</u>
Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure	<u>81</u>
Item 9A. Controls and Procedures	<u>81</u>
Item 9B. Other Information	<u>82</u>
PART III	
Item 10. Directors, Executive Officers and Corporate Governance	<u>83</u>
Item 11. Executive Compensation	<u>83</u>
Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	<u>83</u>
Item 13. Certain Relationships and Related Transactions, and Director Independence	<u>83</u>
Item 14. Principal Accountant Fees and Services	<u>83</u>
PART IV	
Item 15. Exhibits, Financial Statements Schedules	<u>84</u>

---

PART I.

SPECIAL NOTE REGARDING FORWARD-LOOKING STATEMENTS

This report contains forward-looking statements regarding future events and our future results that are subject to the safe harbors created under the Securities Act of 1933 (Securities Act) and the Securities Exchange Act of 1934 (Exchange Act). All statements contained in this report other than statements of historical fact, including statements regarding our future results of operations and financial position, our business strategy and plans, and our objectives for future operations, are forward-looking statements. The words “believe,” “may,” “will,” “estimate,” “continue,” “anticipate,” “plan,” “intend,” “expect,” “seek”, and similar expressions are intended to identify forward-looking statements. We have based these forward-looking statements largely on our current expectations and projections about future events and trends. These forward-looking statements are subject to a number of risks, uncertainties and assumptions, including those described under “Part I, Item 1A. Risk Factors,” and elsewhere in this report. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the future events and trends discussed in this report may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. The events and circumstances reflected in the forward-looking statements may not be achieved or occur. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance, or achievements. We are under no duty to update any of these forward-looking statements after the date of this report or to conform these statements to actual results or revised expectations.

As used in this report, the terms “Model N,” “we,” “us,” “our,” and “the Company” mean Model N, Inc. and its subsidiaries unless the context indicates otherwise.

## ITEM 1. Business

### Overview

Model N is a leader in Revenue Management solutions. Our solutions transform the revenue lifecycle from a series of disjointed operations into a strategic end-to-end process. With deep industry expertise, we support the complex business needs of the world's leading brands in life sciences and technology across more than 120 countries, including Pfizer, AstraZeneca, Sanofi, Gilead, Abbott, Stryker, AMD, Micron, Seagate, STMicroelectronics, NXP, Sesotec, and Southern States.

Many companies, in particular in the life sciences and technology industries, experience a gap between the strategic importance of revenue management and the current state of their revenue management processes. Historically, companies tended to rely on a disjointed patchwork of manual processes, spreadsheets, point applications and legacy systems to manage their revenue processes. These processes and systems operated in isolation from one another and were labor intensive, error prone, inflexible and costly, often resulting in missed revenue opportunities, suboptimal margins and increased revenue compliance risk. Current industry trends, which include shortening product lifecycles, tightening compliance and regulatory controls, increasing channel complexity and growing volumes of transactional data are causing these outdated processes and legacy systems to become increasingly ineffective.

Our expertise in cloud-based revenue management solutions and knowledge of the life sciences and technology industries has enabled us to develop software designed to meet the unique, strategic needs of these industries, such as managed care and government pricing for life sciences companies and channel incentives for technology companies. Model N Revenue Cloud transforms the revenue lifecycle into a strategic, end-to-end process aligned across the enterprise. Our industry specific solution suites – Revenue Cloud for Pharma, Revenue Cloud for Med Tech, Revenue Cloud for Semiconductors and High Tech Manufacturing – offer a range of solutions from individual products to complete product suites. Deployments may vary from specific divisions or territories to enterprise-wide implementations.

### Overview of the Life Sciences and Technology Industries

The life sciences and technology industries are large and highly fragmented. Companies in both industries market their products to a global customer base through diverse channels. Significant costs are required to launch a drug to the global market. Regulatory pressures, consolidation, and other factors in these industries continue to drive a significant focus on revenue management.

Management of the revenue lifecycle is a strategic imperative and source of competitive advantage for life sciences and technology companies as they address increasingly globalized markets, sophisticated buyers, complex channels and expanding volumes of data from internal and market sources. Emerging business models like outcome based pricing, service bundles, further complicate the revenue management processes, which increases the need for effective solution.

Several trends specific to these industries further complicate revenue management.

#### Life sciences:

- the emergence of large group purchasing, managed care organizations and integrated healthcare delivery networks drive increased pricing pressure, contract volume and complexity;
- increased customer and channel incentives and rebates result in the increased risk of extending unearned discounts and the overpayment of rebates;
- shift of purchasing influence from physicians to economic buyers makes price and commercial terms key decision making factors;
- increased spending on healthcare by governments instead of commercial entities adds further regulatory oversight to transactions; and
- increased scope of government mandates, frequency of regulatory reporting and audits, and fines, all of which increase administrative burden and monitoring costs.

#### Technology:

-

shortened product lifecycles drive rapid pricing changes and require quick responses to quotes and competitive bidding;  
increased number of core technology products sold into different end markets with segment-specific pricing;  
cyclicality and rising R&D costs contributing to a focus on maximizing sell time, margins and revenues;

2

---

increased complexity of multi-tiered global distribution channels which intensify channel conflict and price erosion; changing financial reporting requirements due to channel complexity; and increased use of off-invoice discounting to offset upfront discounts and mask end-customer pricing result in a lack of price transparency that can erode gross margins.

#### Challenges to Effective Revenue Management

Traditionally, companies addressed revenue management through a patchwork of manual processes and inflexible and costly custom solutions. This outdated approach to revenue management impedes the ability of companies to respond to changing market conditions, preventing them from maximizing revenue and increasing their revenue compliance risk. Critical challenges include:

**Incomplete and unreliable information for key strategic decisions.** Legacy manual processes and systems used to manage the revenue lifecycle creates silos of data causing companies to make strategic marketing, pricing and resource allocation decisions that are often based on incomplete or inaccurate information. As a result, revenue strategies can be suboptimal, budgets may be misallocated, and sales and marketing efforts can fail to positively impact revenues.

**Revenue leakage due to inadequate contract management and enforcement.** Customer-specific contracts with complex pricing and commercial terms are common in many industries, in particular life sciences and technology. When the commercial terms of these contracts are not automated and monitored systematically, deviations from contract pricing can occur, volume commitments can be missed, unearned discounts may be given, and revenue can be lost.

**Revenue leakage due to overpayment of incentives.** Life sciences and technology companies process massive volumes of rebates and incentives. A lack of centralized, automated and enforceable processes can result in overpayment of incentives. Revenue leakage is also driven by inconsistent global pricing, poor price concession controls, and unmet contractual volume commitments.

**Ineffective pricing across geographies and complex channels.** Sophisticated buyers deploy global procurement strategies to discover and exploit regional and channel differences in pricing and contracting. The inability to enforce a single price for a specific sales opportunity across regions and channels can result in channel conflicts, which result in price and revenue erosion.

**Inaccurate financial reporting.** Complex contracts and distribution channels have made it more difficult to obtain and process financial information, which can result in inaccurate financial reporting. For example, technology companies face significant complexity in financial reporting and revenue recognition at the point of sale in their distribution channels. Life sciences companies have significant challenges correctly accruing their massive rebate and incentive claim volumes.

**Difficulty complying with complicated government regulations.** Satisfying the regulatory requirements of numerous federal and state programs is increasingly complex for life sciences companies. For example, government-driven programs require complex monitoring and reporting to compute and pay mandated rebates and fees under numerous federal and state programs. Government audits can expose ineffective management of these regulatory requirements and can result in penalties or program ineligibility.

#### Our Solutions

Our solutions enable customers to achieve significant returns on investment through increased revenues and gross margins while addressing vital business objectives:

**Driving optimal pricing and contracting strategies.** Our customers use our solutions to develop, deploy, monitor and drive optimal pricing and contracting strategies. Our solutions consolidate information across the revenue lifecycle and provide visibility into historical volume, price and contract performance trends. Our pricing analytics enable our customers to identify untapped revenue opportunities across customers or products and make better pricing and contracting decisions.

- **Realizing greater value from contracts.** Our solutions enable customers to codify and automate complex pricing, incentives and financial and fulfillment terms that previously resided mainly on paper contracts. Our customers are able to maximize the value of contracts and realize additional revenue by tracking their customers' performance and enforcing contract terms. Our solutions automatically price orders in real-time and enforce contract pricing and commercial terms. Our solutions also enable customers to track and

execute other revenue-enhancing financial terms, such as negotiated price increases.

3

---



Maximizing revenue by standardizing and enforcing pricing and discounting policies. Our solutions allow customers to standardize pricing policies that can be enforced automatically across the enterprise and the channels to restrict unauthorized sales practices and discounting by sales personnel. By raising the visibility of, requiring authorization of, and enabling rapid resolution of, non-standard pricing, our customers can use our solutions to reduce unauthorized discounting. Through our channel solutions, our customers can gain visibility into and enforce channel pricing, and reduce price erosion caused by different price quotes for the same end customer.

Executing and optimizing channel incentives. Our solutions enable customers to manage the entire incentive lifecycle, from contracting to recognition and payment. Accurate management allows our customers to eliminate unearned discounts and overpayment of incentives. Our solutions also provide our customers with greater cross channel visibility to manage the effectiveness of their channel incentive programs. With this insight, our customers can better utilize their channel incentives to positively influence channel behavior and thus increase revenue.

Achieving accurate financial reporting. With our solutions, customers can manage all aspects of the contract-to-payment process related to calculating, monitoring, processing and triggering payments to end customers and channel intermediaries. For example, by automating all rebates, these liabilities can be accurately accrued, enabling our customers to consistently record accruals in compliance with financial accounting requirements, while ensuring customers and channels are credited on a timely basis.

Automating government regulatory compliance to reduce revenue risk. Our solutions enable customers to comply systematically with government regulations, policies, procedures, and pricing and reporting requirements. Further, by automating and integrating contract terms, incentives and pricing into mandated price and payment calculations, our life sciences customers are better able to manage compliance with the terms of critical government programs that provide significant sources of revenue.

#### Our Competitive Strengths

We believe our key competitive strengths include:

**Comprehensive approach to revenue management.** Our solutions address the end-to-end revenue management lifecycle. Our integrated, end-to-end application suites enable our customers to transform their revenue management processes from disjointed tactical operations into a cohesive, strategic, end-to-end process. Providing suites of cloud-based solutions is an advantage that enables us to address both decision making and process automation.

**Deep domain knowledge.** Our expertise in the revenue management needs of life sciences and technology companies enables us to develop solutions that address the unique demands of these industries. By incorporating best practices into our industry-specific solutions, implementation methodologies and support programs, our customers can experience significantly accelerated time to value. Our team possesses the deep industry expertise in life sciences and technology to enable our customers to maximize and accelerate the transformational benefits of our solutions.

**Strong installed customer base.** We have established a reputation for delivering revenue management solutions to leading life sciences and technology customers. Our close customer relationships provide us with insight into how these companies use our solutions and help us to maintain a competitive advantage by anticipating their future requirements. We also believe that the use of our products by respected industry leaders also increases the value of our brand in these industries.

**Talented team focused on customer success.** We employ experts from the life sciences and technology industries in key customer-facing and development roles. Additionally, we have established strong core values that start with a focus on customer success. Our customer focus has resulted in close relationships with our customers and a strong reference base for sales opportunities.

#### Products

We provide solutions that span the organizational and operational boundaries of functions such as sales, marketing and finance, and serve as a system of record for key revenue management processes including pricing, contracts, rebates, incentives, channel management, and regulatory compliance. Our solutions are purpose-built for the life sciences and technology industries and are designed to work with enterprise resource planning (ERP) and customer relationship management (CRM) applications that do not typically provide revenue management capabilities. Our solutions enable real-time pricing, contract management, vertical sales management (such as for the semiconductor industry), and channel incentives management, including rebates, incentives and regulatory compliance. Our Revenue

Cloud suites are comprised of multiple applications, which are integrated to work together but which may be deployed individually. For example, when deployed as an interconnected suite, our solutions

4

---

allow prices that are set up in the price management process to flow into the quoting process. Similarly, closed deals are captured in contract management and can be synchronized with ERP systems and into regulatory reporting as required by government agencies. Our solutions provide critical data that is typically not available in either CRM or ERP systems, such as prices, quotes, contracts, incentives and rebate claims. Our solutions can also provide customers predictive revenue insight optimization of sales and marketing investments and offers, as well as customer profitability intelligence.

Revenue Clouds for Pharma and Med Tech – These Revenue Clouds help life science companies optimize revenue throughout the commercialization process and reduces revenue leakage, while adhering to government regulations.

• **Government Pricing.** Helps customers optimize revenue and reduces risk of fines and other penalties due to non-compliance with regulatory pricing requirements.

• **Medicaid.** Helps customers comply with regulatory requirements and pay rebate claims timely and at correct rates for government Medicaid programs.

• **Global Pricing Management.** Enables a streamlined pricing process by consolidating information into a single system of record, which provides users' access to accurate and up-to-date information.

• **Global Tender Management.** Optimizes revenue regionally and globally by enabling opportunity segmentation and targeting, optimal bid pricing and post-award tracking to manage the contract lifecycle and award value.

• **Provider Management.** Reduces the risk of non-compliance with regulatory requirements throughout the institutional contracting process.

• **Payer Management.** Reduces the risk of non-compliance with regulatory requirements throughout the pharmacy benefit manager and payer contracting process.

• **Pricing Intelligence.** Helps customers to quickly identify margin and revenue issues, and disaggregate their data to identify root causes.

• **Configure Price Quote.** Streamlines the quote to contract process by enabling the configuration of complex services, bundles and solutions into a single interface. This application provides integration with the SAP ERP system and SAP Variant Configurator.

• **Contract Lifecycle Management.** Enables organizations to create and manage all types of sell-side contracts in one place including service contracts, sales contracts, NDAs, statements of work, and more. The solution enables users to create and manage contracts directly.

Revenue Cloud for Semiconductors and High Tech Manufacturing- These Revenue Clouds enable customers to modernize their sales processes by adopting a strategic approach to manage the revenue lifecycle by planned revenue.

• **Deal Management.** This subscription increases deal conversion and pricing consistency with pricing, quotes and contracts natively supporting the High Tech Channel end-to-end.

• **Deal Intelligence.** This subscription controls price concessions and determines ideal prices using in context analytics.

• **Channel Management.** This subscription provides manufacturers a clearer view of inventory, including the ability to evaluate and perform actions, such as price protection and stock rotation and match available inventory to quotes.

• **Market Development Fund Management.** This subscription allows companies to streamline their MDF process and reduce revenue leakage by increasing partner participation.

• **Sales Conductor.** This subscription extends Salesforce Sales Cloud with purpose-built capabilities for the semiconductor and electronic component industries.

• **Rebates Management.** This subscription centralizes control of rebate programs to reduce upfront discounts and effective management of all rebate programs.

• **Channel Data Management.** This subscription automates the process of collection, cleansing, validation and standardization of channel partner data, such as POS, inventory, and claims.

• **Configure Price Quote.** Streamlines the quote to contract process by enabling the configuration of complex services, bundles and solutions into a single interface. This application provides integration with the SAP ERP system and SAP Variant Configurator.



Contract Lifecycle Management. Enables organizations to create and manage all types of sell-side contracts in one place including service contracts, sales contracts, NDAs, statements of work, and more. The solution enables users to create and manage contracts directly.

#### Technology

Our Revenue Cloud solution is architected in layers. The first layer is composed of end-user operational and analysis solutions. The middle layer is comprised of supporting services and business engines. The lowest layer is comprised of a unified technology platform used to construct and support all modules in higher layers. The platform also provides access to the normalized operational database where the transactional revenue management data used by the operational solutions are stored. It also provides access and facilitates the synchronization with the de-normalized analytics database where the revenue management data used by the analytics solutions are stored.

Our Revenue Cloud solutions are built on a variety of industry standards, depending on the solution, such as Java EE, HTML5, Amazon Web Service and Force.com, which give the end-users an intuitive and familiar browsing experience. These standard technologies enable us to offer our customers a familiar technology environment that is widely understood and utilized, as well as the ability to use certain solutions on a tablet and other mobile devices, including smart phones running iOS and Android.

Our technology platform has allowed us to quickly develop new solutions, features and functionalities. We believe the platform is configured to meet the needs of broad horizontal markets as well as specific vertical markets and, within each instance, to meet the specific needs of each of our customers. The flexibility of the technology platform has also allowed us to add mobile device support and deploy cloud-based solutions in a rapid and efficient manner, and we believe it will enable us to continue to add new capabilities in the future.

Our technology is designed specifically to handle the complex calculations and massive data sets associated with revenue management processes typical in the life sciences and technology industries. With the expansion of global deployments, scalability has also been a key requirement of our customers and has been a focus for us across all of the layers of our application suites.

Our solutions have been designed to ensure high reliability, strong security and the technology platform includes a comprehensive set of built-in features and management tools to allow optimal and continuous operation. The Revenue Cloud for Pharma, Revenue Cloud for Med Tech, Revenue Cloud for Semiconductors and High Tech Manufacturing suites are only offered to our customers through the cloud. We operate a reliable architecture designed to reduce the risk associated with infrastructure outages, improve system scalability and security, and allow for flexibility in deployment. The environment for our cloud-based solutions is designed to be secure and provide high availability with disaster recovery capabilities.

#### Services and Customer Support

We offer a comprehensive set of services to assist our customers through the full lifecycle of new business transformations or upgrades of existing solutions. We help our customers define, implement and support or manage our solutions. We provide implementation services, managed services and strategic services both on and off-shore, as described below.

**Implementation services.** We assist our customers in the implementation or upgrade of our Revenue Cloud, including project management, design and solution blueprint, process improvement, application configuration or customization, systems integration, data cleansing and migration, testing and performance tuning, production cutover and post go-live support.

**Managed services.** We offer managed services for customers using our solutions either on-premise through a legacy contract or in the cloud, which include systems administration and infrastructure management, application support, custom feature support and education services, including process, application and end-user training.

**Strategic services.** We assist our customers in defining best practices and strategies in revenue management, assessing the capability of existing transaction and decision support solutions, developing business cases for change and transformation plans and answering strategic questions.

**Customer support.** We deliver customer support from support centers located in United States, as well as at our offices in India. We offer a range of support offerings, including 24x7x365, packaged into varying levels of access to our support resources.

For project delivery, we use a standard implementation methodology incorporating lessons learned from past work to ensure the success of our current projects. This methodology enables us to predictably estimate project costs and schedule, and proactively mitigate most implementation challenges.

In addition, we have cultivated relationships to promote and assist with the implementation of our solutions with consulting firms. While we do not maintain formal contractual relationships with these firms that require them to promote our solutions to their clients, we work with them for implementation and other professional services projects. As a result, these firms have expertise in our technologies and best practices and have invested in building out their practice areas with our revenue management solutions.

We deploy our resources globally through offices located in the United States, India, and Switzerland.

#### Customers

As of September 30, 2018, we had 154 direct customers which includes two channel partners. These channel partners use our cloud-based software to serve over 20 end customers in life sciences. We often sell to multiple divisions within our customers' organizations, which have the ability to independently purchase solutions and services directly; however, we treat multiple divisions as a single customer to the extent they are part of a consolidated corporation. For the fiscal year ended September 30, 2018, revenues from our life sciences and technology customers accounted for approximately 83% and 17% of our total revenues, respectively. Our customers range in size from the largest multi-national corporations to smaller, emerging companies. Our customers represent a range of sub-verticals within the larger life sciences and technology industries, including biotechnology, pharmaceutical, medical device, generics, semiconductor, electronic component, consumer electronics and software. During the fiscal years ended September 30, 2018 and 2017, one customer, Johnson & Johnson, accounted for approximately 15% and 11% of our total revenues, respectively. However, during the fiscal year ended September 30, 2018 and 2017, no customer represented more than 10% of our subscription revenues. During the fiscal year ended September 30, 2016, no customer accounted for more than 10% of our total revenues.

We pursue close, long-term relationships with our customers because we believe strong customer relationships are the key to our success. Many of these relationships date back to our original on-premise, perpetual license business model. Customers maintaining on-premise implementations under legacy perpetual license contracts may purchase, at their discretion, maintenance and support services and in some cases managed services on an annual basis. For the last several years, we have been transitioning our business model to software as a service. New customers as well as customers who originally purchased a perpetual license now enter into a software as a service agreement that provides for a subscription to our solutions as well as implementation services.

#### Sales and Marketing

We primarily target large and mid-sized organizations worldwide through our direct sales force. Our sales and marketing programs are also organized by geographic region. We augment our sales professionals with solutions engineers and industry domain experts via our Center of Excellence. These professionals work closely with prospective customers during the sales process. Our marketing team supports sales with demand generation, competitive analysis and sales tools, and contributes to the sales process through lead generation, brand building, industry analyst relations, public relations and industry research.

We host an annual customer conference, Rainmaker, which plays a significant role in driving sales of our solutions. Customers are invited both as attendees and participants to deliver sessions relevant to the interests and practices of the life sciences and technology industries. We also invite potential customers to this conference in order to leverage our strong customer relationships to accelerate sales cycles. In addition, Rainmaker provides a forum to build our eco-system of strategic partner relationships, offering partners the opportunity to work closely with our sales force on joint sales pursuits.

#### Research and Development

Our research and development organization is responsible for the definition, design, development, testing, certification and ongoing maintenance of our solutions. Our efforts are focused on developing new solutions and technologies and further enhancing the functionality, reliability, performance and flexibility of existing solutions. When considering improvements and enhancements to our solutions, we communicate with our customers and partners who provide significant feedback for product development and innovation. We focus our efforts on anticipating customer demand and bringing our new solutions and enhancements of existing solutions to market through a seasonal release schedule (Spring, Summer, and Winter) in order to remain competitive in the marketplace. We also closely monitor the changes in business environment and regulations in our target industries, particularly in life sciences, where quick deliveries of updates to our solutions are critical to allowing our customers to remain in compliance with government regulations. Because our solutions often serve as a system-of-record for our customers' revenue management processes, our research and development efforts reflect the extensive IT needs of our customers in both life sciences and technology. Our research and development efforts continue to focus on enhancing our solutions to meet the increasingly complex

infrastructure requirements of our customers in these industries.

Our product development process is based on deep industry knowledge and familiarity with the specific requirements of individual customers, combined with continued innovation using state of the art software development processes and tools. We follow an “agile” development process, which helps us clarify requirements and receive feedback early, accommodate changes and deliver products that better match the overall needs of our customers with higher quality. As of September 30, 2018, our research and development team consisted of 232 full-time employees globally.

7

---



## Competition

The market for revenue management solutions is highly competitive, fragmented and subject to rapid changes in technology. We face competition from spreadsheet-assisted manual processes, internally developed solutions, large integrated systems vendors, providers of business process outsourcing services, horizontal revenue management solutions and smaller companies that offer point solutions. Companies lacking information technology (IT) resources often resort to spreadsheet-assisted manual processes or personal database applications. In addition, some potential customers, particularly large enterprises, may elect to develop their own internal solutions, including custom-built solutions that are designed to support the needs of a single organization. Companies with large investments in ERP or CRM applications, which do not typically provide revenue management capabilities, may extend these horizontal applications with customizations or point solution applications in order to address single or a small set of revenue management sub processes or drivers. Common horizontal applications that customers attempt to configure for this purpose in the life sciences and technology industries include large integrated systems vendors like SAP AG and Oracle Corporation. We also encounter competition from small independent companies, which compete on the basis of price, unique product features or functions and custom developments.

We believe we compete based primarily on the following factors:

- industry expertise;
- comprehensiveness of solution;
- reliability, scalability and performance;
- access to prospective customers through strategic partnerships;
- global system and support capabilities; and
- industry brand, reputation and customer base.

While we believe that we compete favorably on the basis of each of the factors listed above, many of our competitors have greater name recognition, larger sales and marketing budgets and greater resources than we do and may have pre-existing relationships with our potential customers, including relationships with, and access to, key decision makers within these organizations, and major distribution agreements with consultants and system integrators. Moreover, many software vendors could bundle solutions or offer them at a low price as part of a larger product sale.

With the introduction of new technologies and market entrants, we expect competition to intensify in the future. We also expect enterprise software vendors that focus on enterprise resource planning or back-office applications to enter our market with competing products. In addition, we expect sales force automation vendors to acquire or develop additional solutions that may compete with our solutions.

## Intellectual Property

We rely upon a combination of copyright, trade secret, trademark and, to a lesser extent, patent laws, and we also rely on contractual restrictions, such as confidentiality agreements and licenses, to establish and protect our proprietary rights. As of September 30, 2018, we had ten patent applications pending and five issued patents expiring between 2023 and 2034. We have a number of registered and unregistered trademarks. We maintain a policy requiring our employees, consultants and other third parties to enter into confidentiality and proprietary rights agreements and to control access to our software, documentation and other proprietary information. We also believe that factors resulting from our length of presence in the market and significant research and development investments, such as our deep expertise in life sciences and technology revenue management practices, the ability of our solutions to handle the complexities of revenue management processes, the technological and creative skills of our personnel, the creation of new features and functionality and frequent enhancements to our solutions are essential to establishing and maintaining our technology leadership position.

Despite our efforts to protect our proprietary rights, unauthorized parties may attempt to copy or obtain and use our technology to develop products with the same functionality as our solutions. Policing unauthorized use of our technology is difficult. The laws of other countries in which we market our application suite may offer little or no effective protection of our proprietary technology. Our competitors could also independently develop technologies equivalent to ours, and our intellectual property rights may not be broad enough for us to prevent competitors from

selling products incorporating those technologies. Reverse engineering, unauthorized copying or other misappropriation of our proprietary technology could enable third parties to benefit from our technology without paying us for it, which would significantly harm our business.

8

---

## Employees

As of September 30, 2018, we employed 782 people, including 400 in services and customer support, 232 in research and development, 86 in sales and marketing and 64 in a general and administrative capacity. As of such date, we had 411 employees in the United States and 371 employees in international locations. We also engage temporary employees and consultants. None of our employees are represented by a labor union with respect to his or her employment with us. We have not experienced any work stoppages and we consider our relations with our employees to be good.

## Corporate Information

We were incorporated in Delaware on December 14, 1999. Our principal offices are located at 777 Mariners Island Boulevard, Suite 300, San Mateo, CA 94404, and our telephone number is (650) 610-4600. Our website address is [www.modeln.com](http://www.modeln.com). The information contained on, or that can be accessed through, our website is not part of this report. Model N is our registered trademark in the United States and in various international jurisdictions. Model N, the Model N logo and all of our product names appearing in this report are our trademarks. Other trademarks appearing in this report are the property of their respective holders.

## Available Information

We file annual, quarterly and other reports, proxy statements and other information with the Securities and Exchange Commission (SEC) under the Securities Exchange Act of 1934, as amended (Exchange Act). We also make available, free of charge on the investor relations portion of our website at [investor.modeln.com](http://investor.modeln.com), our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after they are filed electronically with the SEC. You can also view these reports on the SEC's website at <http://www.sec.gov/> where you can obtain most of our SEC filings. You can also obtain paper copies of these reports, without charge, by contacting Investor Relations at (650) 610-4600.

## ITEM 1A. Risk Factors

Our operating and financial results are subject to various risks and uncertainties. You should carefully consider the risks and uncertainties described below, together with all of the other information in this report, including the Consolidated Financial Statements and the related notes included elsewhere in this report, before deciding whether to invest in shares of our common stock. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties that we are unaware of, or that we currently believe are not material, may also become important factors that adversely affect our business. If any of the following risks or others not specified below actually occurs, our business, financial condition, results of operations, and future prospects could be materially and adversely affected. In that event, the market price of our common stock could decline, and you could lose part or all of your investment.

### Risks Related to Our Business

We have incurred losses in the past, and we may not be profitable in the future.

We have incurred net losses of \$28.2 million and \$39.5 million for the fiscal years ended September 30, 2018 and 2017, respectively. As of September 30, 2018, we had an accumulated deficit of \$203.5 million. Our expenses may increase in future periods as we implement additional initiatives designed to grow our business, including, among other things, increasing sales to existing customers, expanding our customer base, introducing new applications, enhancing existing solutions, extending into the mid-market, and continuing to penetrate the technology industry. Increased operating expenses related to personnel costs such as salary, bonus, commissions and stock-based compensation as well as third-party contractors, travel-related expenses and marketing programs may also increase our expenses in future periods. In the near-term, our revenues may not be sufficient to offset increases in operating expenses, and we expect that we will incur losses. Additionally, we may encounter unforeseen expenses, difficulties, complications, delays and other unknown factors that may result in losses in future periods. We cannot assure you that we will again obtain and maintain profitability in the future. Any failure to return to profitability may materially and adversely affect our business, results of operations and financial condition.

Our operating results are likely to vary significantly from period to period and be unpredictable, which could cause the trading price of our common stock to decline.

Our operating results have historically varied from period to period, and we expect that this trend will continue as a result of a number of factors, many of which are outside of our control and may be difficult to predict, including:

• our ability to increase sales to and renew agreements with our existing customers;

- our ability to expand and improve the productivity of our direct sales force;
- our ability to attract and retain new customers and to improve sales execution;
- the continued ability to transition from an on-premise to a cloud-based business model;
- our ability to transition effectively to new leadership under a new Chief Executive Officer;
- the timing and volume of incremental customer purchases of our cloud-based solutions, which may vary from period to period based on a customer's needs at a particular time;
- our ability to successfully expand our business domestically and internationally;
- disruptions in our relationships with partners;
- the timing of new orders and revenue recognition for new and prior period orders;
- changes in the competitive landscape of our industry, including mergers or consolidation among our customers or competitors;
- the complexity of implementations and the scheduling and staffing of the related personnel, each of which can affect the timing and duration of revenue recognition;
- issues related to changes in customers' business requirements, project scope, implementations or market needs;
- the mix of revenues in any particular period between license and implementation, and SaaS and maintenance;
- the timing of upfront recognition of sales commission expense relative to the deferred recognition of our revenues;
  - the timing of recognition of payment of royalties;
- the timing of our annual payment and recognition of employee non-equity incentive and bonus payments;
- the budgeting cycles and purchasing practices of customers;
- changes in customer requirements or market needs;
- delays or reductions in information technology spending and resulting variability in customer orders from quarter to quarter;
- delays or difficulties encountered during customer implementations, including customer requests for changes to the implementation schedule;
- the timing and success of new product or service introductions by us or our competitors;
- the amount and timing of any customer refunds or credits;
- our ability to accurately estimate the costs associated with any fixed bid projects;
- deferral of orders from customers in anticipation of new solutions or solution enhancements announced by us or our competitors;
- the length of time for the sale and implementation of our solutions to be complete, and our level of upfront investments prior to the period we begin generating revenues associated with such investments;
- the amount and timing of our operating expenses and capital expenditures, and our ability to timely repay our debt;
- price competition;
- the rate of expansion and productivity of our direct sales force;
- regulatory compliance costs;
- sales commissions expenses related to large transactions;
- technical difficulties or interruptions in the delivery of our cloud-based solutions;
- seasonality or cyclical fluctuations in our industries;
- future accounting pronouncements or changes in our accounting policies;
- increases or decreases in our expenses caused by fluctuations in foreign currency exchange rates, as a significant portion of our expenses are incurred and paid in currencies other than the U.S. dollar;
- general economic conditions, both domestically and in our foreign markets; and

entry of new competitors into our market.

Any one of the factors above or discussed elsewhere in this report or the cumulative effect of some of the factors referred to above may result in significant fluctuations in our financial and other operating results. This variability and unpredictability could result in our failure to meet expectations of investors for our revenues or other operating results for a particular period. If we fail to meet or exceed such expectations for these or any other reasons, the market price of our common stock could decrease.

We depend on our management team and our key sales and development and services personnel, and the loss of one or more key employees or groups could harm our business and prevent us from implementing our business plan in a timely manner.

Our success depends on the expertise, efficacy and continued services of our executive officers, who are geographically dispersed. We have in the past and may in the future continue to experience changes in our executive management team resulting from the departure of executives or subsequent hiring of new executives, which may be disruptive to our business. For example, in May, 2018, Jason Blessing assumed the role of Chief Executive Officer and Zack Rinat, our interim Chief Executive Officer resigned from his position as Chief Executive Officer and Chairman of the Board. We anticipate that we will experience a transitional period as Mr. Blessing becomes fully integrated into his new role, and such transition may have a disruptive impact on our ability to implement our business strategy and could have a material adverse effect on our business. Any changes in business strategies can create uncertainty, may negatively impact our ability to execute our business strategy quickly and effectively and may ultimately be unsuccessful. The impact of hiring new executives may not be immediately realized. We are also substantially dependent on the continued service of our existing development and services personnel because of their familiarity with the inherent complexities of our solutions.

Our personnel do not have employment arrangements that require them to continue to work for us for any specified period and, therefore, they could terminate their employment with us at any time. We do not maintain key person life insurance policies on any of our employees. The loss of one or more of our key employees or groups could seriously harm our business.

We must improve our sales execution and increase our sales channels and opportunities in order to grow our revenues, and if we are unsuccessful, our operating results may be adversely affected.

We must improve our sales execution in order to, among other things, increase the number of our sales opportunities and grow our revenue. We must improve the market awareness of our solutions and expand our relationships with our channel partners in order to increase our revenues. Further, we believe that we must continue to develop our relationships with new and existing customers and partners, and create additional sales opportunities to effectively and efficiently extend our geographic reach and market penetration. Our efforts to improve our sales execution could result in a material increase in our sales and marketing expense and general and administrative expense, and there can be no assurance that such efforts will be successful. We have experienced challenges in sales execution in the past, and if we are unable to significantly improve our sales execution, increase the awareness of our solutions, create additional sales opportunities, expand our relationships with channel partners, leverage our relationship with strategic partners, such as Cumberland and High Point, or effectively manage the costs associated with these efforts, our operating results and financial condition could be materially and adversely affected.

Our transition from an on-premise to a cloud-based business model is subject to numerous risks and uncertainties.

Our business model has shifted away from sales of on premise software licenses to focus on sales of subscriptions for our cloud-based solutions, which provide our customers the right to access certain of our software in a hosted environment for a specified subscription period. This cloud-based strategy may give rise to a number of risks, including the following:

- if customers are uncomfortable with cloud-based solutions and desire only perpetual licenses, we may experience longer than anticipated sales cycles and sales of our cloud-based solutions may lag behind our expectations;
- our cloud-based strategy may raise concerns among our customer base, including concerns regarding changes to pricing over time, service availability, information security of a cloud-based solution and access to files while offline or once a subscription has expired;

- we may be unsuccessful in maintaining our target pricing, adoption and projected renewal rates;
- we may select a target price that is not optimal and could negatively affect our sales or earnings; and
- we may incur costs at a higher than forecasted rate as we expand our cloud-based solutions.

Our cloud-based strategy also requires a considerable investment of technical, financial, legal and sales resources, and a scalable organization. Market acceptance of such offerings is affected by a variety of factors, including but not limited to: security,

reliability, scalability, customization, performance, current license terms, customer preference, customer concerns with entrusting a third party to store and manage their data, public concerns regarding privacy and the enactment of restrictive laws or regulations. Whether our business model transition will prove successful and will accomplish our business and financial objectives is subject to numerous uncertainties, including but not limited to: customer demand, renewal rates, channel acceptance, our ability to further develop and scale infrastructure, our ability to include functionality and usability in such solutions that address customer requirements, tax and accounting implications, pricing and our costs. In addition, the metrics we use to gauge the status of our business may evolve over the course of the transition as significant trends emerge.

If we are unable to successfully execute our cloud-based strategy and navigate our business model transition in light of the foregoing risks and uncertainties, our results of operations could be negatively impacted.

Failure to adequately expand and train our direct sales force will impede our growth.

We rely almost exclusively on our direct sales force to sell our solutions. We believe that our future growth will depend, to a significant extent, on the continued development of our direct sales force and its ability to manage and retain our existing customer base, expand the sales of our solutions to existing customers and obtain new customers. Because our software is complex and often must interoperate with complex computing requirements, it can take longer for our sales personnel to become fully productive compared to other software companies. Our ability to achieve significant growth in revenues in the future will depend, in large part, on our success in recruiting, training and retaining a sufficient number of direct sales personnel. New hires require significant training and may, in some cases, take more than a year before becoming fully productive, if at all. If we are unable to hire and develop sufficient numbers of productive direct sales personnel, and if these sales personnel are unable to achieve full productivity, sales of our solutions will suffer and our growth will be impeded.

Our sales cycles are time-consuming, and it is difficult for us to predict when or if sales will occur.

Our sales efforts are often targeted at larger enterprise customers, and as a result, we face greater costs, must devote greater sales support to individual customers, have longer sales cycles and have less predictability in completing some of our sales. Also, sales to large enterprises often require us to provide greater levels of education regarding the use and benefits of our solutions. We believe that our customers view the purchase of our solutions as a significant and strategic decision. As a result, customers carefully evaluate our solutions, often over long periods with a variety of internal constituencies. In addition, the sales of our solutions may be subject to delays if the customer has lengthy internal budgeting, approval and evaluation processes, which are quite common in the context of introducing large enterprise-wide technology solutions. As a result, it is difficult to predict the timing of our future sales.

Our revenues are dependent on our ability to maintain and expand existing customer relationships and our ability to attract new customers.

The continued growth of our revenues is dependent in part on our ability to expand the use of our solutions by existing customers and attract new customers. Likewise, it is also important that customers using our on-premise solutions renew their maintenance agreements and that customers using our cloud-based solutions renew their subscription agreements with us. Our customers have no obligation to renew their agreements after the expiration of the initial term, and there can be no assurance that they will do so. We have had in the past and may in the future have disputes with customers regarding our solutions, which may impact such customers' decisions to continue to use our solutions and pay for maintenance and support in the future.

If we are unable to expand our customers' use of our solutions, sell additional solutions to our customers, maintain our renewal rates for maintenance and subscription agreements and expand our customer base, our revenues may decline or fail to increase at historical growth rates, which could adversely affect our business and operating results. In addition, if we experience customer dissatisfaction with customers in the future, we may find it more difficult to increase use of our solutions within our existing customer base and it may be more difficult to attract new customers, or we may be required to grant credits or refunds, any of which could negatively impact our operating results and materially harm our business.



The loss of one or more of our key customers could slow our revenue growth or cause our revenues to decline. A substantial portion of our total revenues in any given period may come from a relatively small number of customers. As of September 30, 2018, we had 154 customers. Although our largest customers typically change from period to period, for the fiscal year ended September 30, 2018, our 15 largest customers accounted for more than 57% of our total revenues, and one customer, Johnson & Johnson, accounted for approximately 15% of our total revenues in fiscal year 2018. However, during the fiscal year ended September 30, 2018, no customer represented more than 10% of our subscription revenues. We expect that we will continue to depend upon a relatively small number of customers for a significant portion of our total revenues for the foreseeable

future. The loss of any of our significant customers or groups of customers for any reason, or a change of relationship with any of our key customers may cause a significant decrease in our total revenues.

Additionally, mergers or consolidations among our customers in the life sciences and semiconductor industries, both of which are currently undergoing significant consolidation, could reduce the number of our customers and could adversely affect our revenues and sales. In particular, if our customers are acquired by entities that are not also our customers, that do not use our solutions or that have more favorable contract terms and choose to discontinue, reduce or change the terms of their use of our solutions, our business and operating results could be materially and adversely affected.

If our solutions experience data security breaches, and there is unauthorized access to our customers' data, we may lose current or future customers, our reputation and business may be harmed and we may incur significant liabilities.

Our solutions are used by our customers to manage and store personally identifiable information, proprietary information and sensitive or confidential data relating to their business. Although we maintain security features in our solutions, our security measures may not detect or prevent hacker interceptions, break-ins, security breaches, the introduction of viruses or malicious code, such as "ransomware," and other disruptions that may jeopardize the security of information stored in and transmitted by our solutions. Cyber-attacks and other malicious Internet-based activity continue to increase generally. A party that is able to circumvent our security measures in our solutions could misappropriate our or our customers' proprietary or confidential information, cause interruption in their operations, damage or misuse their computer systems and misuse any information that they misappropriate. Because techniques used to obtain unauthorized access or sabotage systems change frequently and generally are not identified until they are launched against a target, we may be unable to anticipate these techniques or to implement adequate preventative measures.

There can be no assurance that limitation of liability, indemnification or other protective provisions in our contracts would be applicable, enforceable or adequate in connection with a security breach, or would otherwise protect us from any such liabilities or damages with respect to any particular claim. We also cannot be sure that our existing general liability insurance coverage and coverage for errors or omissions will continue to be available on acceptable terms or will be available in sufficient amounts to cover one or more large claims, or that the insurer will not deny coverage as to any future claim. One or more large claims may be asserted against us that exceed our available insurance coverage, or changes in our insurance policies may occur, including premium increases or the imposition of large deductible or co-insurance requirements. If any compromise of the security of our solutions were to occur, we may be subject to litigation, indemnity obligations and other possible liabilities, and we may lose existing customers and the ability to attract future customers, any of which could harm our reputation, business, financial condition and results of operations and result in significant liability.

Changes in privacy laws, regulations and standards may cause our business to suffer.

Personal privacy and data security have become significant issues in the United States, Europe and in many other jurisdictions where we offer our solutions. The regulatory framework for privacy and security issues worldwide is rapidly evolving and is likely to remain uncertain for the foreseeable future. For example, the Court of Justice of the European Union ruled in October 2015 that the US-EU Safe Harbor framework was invalid, and the framework's successor, the US-EU Privacy Shield, while adopted, has been criticized and challenged by multiple privacy advocacy groups. Furthermore, federal, state or foreign government bodies or agencies have in the past adopted, and may in the future adopt, laws and regulations affecting data privacy. Industry organizations also regularly adopt and advocate for new standards in this area. In the United States, these include rules and regulations promulgated under the authority of federal agencies and state attorneys general and legislatures and consumer protection agencies. Internationally, many jurisdictions in which we operate have established their own data security and privacy legal framework with which we or our customers must comply, including but not limited to, the European General Data Protection Regulation, which imposes additional obligations and risks upon our business. In many jurisdictions, enforcement actions and consequences for noncompliance are also rising. In addition to government regulation, privacy advocates and industry groups may propose new and different self-regulatory standards that either legally or contractually applies to us.

Any inability to adequately address privacy and security concerns, even if unfounded, or comply with applicable privacy and data security laws, regulations and policies, could result in additional cost and liability to us, damage our reputation, inhibit sales and adversely affect our business. Furthermore, the costs of compliance with, and other burdens imposed by, the laws, regulations, and policies that are applicable to the businesses of our customers may limit the use and adoption of, and reduce the overall demand for, our solutions. Privacy and data security concerns, whether valid or not valid, may inhibit market adoption of our solutions, particularly in foreign countries. If we are not able to adjust to changing laws, regulations and standards related to privacy or security, our business may be harmed.

Our acquisition of other companies could require significant management attention, disrupt our business, dilute stockholder value and adversely affect our operating results.

As part of our business strategy, we have in the past and may in the future make investments in other companies, solutions or technologies to, among other reasons, expand or enhance our product offerings. In the future, any significant acquisition would require the consent of our lenders. Any failure to receive such consent could delay or prohibit us from acquiring companies that we believe could enhance our business.

We may not ultimately strengthen our competitive position or achieve our goals from any future acquisition, and any acquisitions we complete could be viewed negatively by users, customers, partners or investors. In addition, if we fail to integrate successfully such acquisitions, or the technologies associated with such acquisitions, into our company, the revenues and operating results of the combined company could be adversely affected. In addition, we may not be able to successfully retain the customers and key personnel of such acquisitions over the longer term, which could also adversely affect our business. The integration of any future-acquired business will require significant time and resources, and we may not be able to manage the process successfully. We may not successfully evaluate or utilize the acquired technology and accurately forecast the financial impact of the acquisition, including accounting charges.

It is also possible that a governmental entity could initiate an antitrust investigation at any time. Among other things, an investigation that is resolved unfavorably to us could delay or prevent the completion of a transaction, require us to divest or sell the assets or businesses we acquired, limit the ability to realize the expected financial or strategic benefits of a transaction or have other adverse effects on our current business and operations.

We may have to pay cash, incur debt or issue equity securities to pay for any acquisition, each of which could affect our financial condition or the value of our capital stock. To fund any future acquisition, we may issue equity, which would result in dilution to our stockholders, or incur more debt, which would result in increased fixed obligations and could subject us to additional covenants or other restrictions that would impede our ability to manage our operations. Because we recognize a majority of our SaaS and maintenance revenues from our customers over the term of their agreements, downturns or upturns in sales of our cloud-based solutions may not be immediately reflected in our operating results.

SaaS and maintenance revenues primarily include subscription and related implementation fees from customers accessing our cloud-based solutions and revenues associated with maintenance agreements from license customers. We recognize a majority of our SaaS and maintenance revenues over the term of our customer agreements, which are typically one year or longer in some cases. As a result, most of our quarterly SaaS and maintenance revenues result from agreements entered into during previous quarters. Consequently, a shortfall in sales of our cloud-based solutions or renewal of maintenance and support agreements in any quarter may not significantly reduce our SaaS and maintenance revenues for that quarter but would negatively affect SaaS and maintenance revenues in future quarters. Accordingly, the effect of significant downturns in sales of our cloud-based solutions or renewals of our maintenance and support agreements may not be fully reflected in our results of operations until future periods. We may be unable to adjust our cost structure to compensate for this potential shortfall in SaaS and maintenance revenues. Our revenue recognition model for our cloud-based solutions and maintenance and support agreements also makes it difficult for us to rapidly increase our revenues through additional sales in any period, as a significant amount of our revenues are recognized over the applicable agreement term. As a result, changes in the volume of sales of our cloud-based solutions or the renewals of our maintenance and support agreements in a particular period would not be fully reflected in our revenues until future periods.

Our indebtedness could adversely affect our business and limit our ability to expand our business or respond to changes, and we may be unable to generate sufficient cash flow to satisfy our debt service obligations.

In May 2018, we entered into a credit agreement with Wells Fargo under which we incurred \$50 million of indebtedness to refinance indebtedness that we incurred in January 2017 to fund the cash portion of our Revitas acquisition, and established a revolving credit facility of \$5.0 million. This term loan is secured by substantially all of our assets and matures in May 2023. We also issued two promissory notes for an aggregate of \$10 million in January 2017 to the sellers of Revitas, one of which was repaid in full in May 2018. The incurrence of significant indebtedness could have adverse consequences, including the following:

-

- reducing the availability of our cash flow for our operations, capital expenditures, future business opportunities and other purposes;
- limiting our flexibility in planning for, or reacting to, changes in our business and the industries in which we operate;
  - increasing our vulnerability to general adverse economic and industry conditions; and
  - lengthening our sales process as customers evaluate our financial viability.

We must repay the \$50 million term loan in quarterly installments of \$250,000 each from September 30, 2018 through June 30, 2019, \$625,000 each from September 30, 2019 through June 30, 2020, and \$937,500 each from September 30, 2020 through March 31, 2023, and must repay the remaining principal amount at maturity in May 2023.

Additionally, our remaining promissory note to the sellers of Revitas will mature in January 2020. Our ability to generate cash to repay our indebtedness is subject to the performance of our business, as well as general economic, financial, competitive and other factors that are beyond our control. If our business does not generate sufficient cash flow from operating activities or if future borrowings are not available to us in amounts sufficient to enable us to fund our liquidity needs, our operating results, financial condition and ability to expand our business may be adversely affected.

The term loan bear interest at a variable rate of either a base rate plus a margin ranging from 2.0% to 3.5%, or LIBOR plus a margin ranging from 3.0% to 4.5%, which exposes us to interest rate risk. Changes in economic conditions outside of our control could result in higher interest rates, thereby increasing our interest expense even though the amount borrowed remained the same.

Additionally, the credit agreement governing our term loans with Wells Fargo contains various restrictive covenants, including maintaining consolidated liquidity (cash in the United States plus revolving credit line availability) of at least \$15.0 million, minimum levels of maintenance and subscription fee revenue and, if liquidity is less than \$30 million for 90 consecutive days, a leverage ratio not greater than 3.50 to 1.00. The credit agreement also requires us and our guarantors to maintain certain non-financial covenants, including covenants restricting our ability to dispose of assets, changing our organizational documents, merging with or acquiring other entities, incurring other indebtedness and making investments. Our ability to comply with some of these restrictive covenants can be affected by events beyond our control, and we may be unable to do so. Upon the occurrence of an event of default, our lenders could elect to declare all amounts outstanding under our financing agreement to be immediately due and payable. If we are unable to repay that amount, our lenders could seize our assets securing the loans and our financial condition could be adversely affected.

We may face risks related to securities litigation that could result in significant legal expenses and settlement or damage awards.

We have been in the past and may in the future become subject to claims and litigation alleging violations of the securities laws or other related claims, which could harm our business and require us to incur significant costs. Significant litigation costs could impact our ability to comply with certain financial covenants under our credit agreement. We are generally obliged, to the extent permitted by law, to indemnify our current and former directors and officers who are named as defendants in these types of lawsuits. Regardless of the outcome, litigation may require significant attention from management and could result in significant legal expenses, settlement costs or damage awards that could have a material impact on our financial position, results of operations and cash flows.

Our implementation cycle is lengthy and variable, depends upon factors outside our control and could cause us to expend significant time and resources prior to earning associated revenues.

The implementation and testing of our solutions typically range from a few months to up to twelve months, and unexpected implementation delays and difficulties can occur. Implementing our solutions typically involves integration with our customers' systems, as well as adding their data to our system. This can be complex, time-consuming and expensive for our customers and can result in delays in the implementation and deployment of our solutions. The lengthy and variable implementation cycle may also have a negative impact on the timing of our revenues, causing our revenues and results of operations to vary significantly from period to period.

A substantial majority of our total revenues have come from sales of our enterprise application suite, and decreases in demand for our enterprise application suite could adversely affect our results of operations and financial condition. Historically, a substantial majority of our total revenues has been associated with our enterprise application suite, whether deployed as individual solutions or as a complete suite. We expect our enterprise application suite to continue to generate a substantial majority of our total revenues for the foreseeable future. Declines and variability in demand for our enterprise application suite could occur for a number of reasons, including improved products or product versions being offered by competitors, competitive pricing pressures, failure to release new or enhanced versions on a timely basis, technological changes that we are unable to address or that change the way our customers utilize our

solutions, reductions in technology spending, export restrictions or other regulatory or legislative actions that could limit our ability to sell those products to key customer or market segments. Our business, results of operations, financial condition and cash flows would be adversely affected by a decline in demand for our enterprise application suite.

15

---

Our customers often require significant configuration efforts to match their complex business processes. The failure to meet their requirements could result in customer disputes, loss of anticipated revenues and additional costs, which could harm our business.

Our customers often require significant configuration services to address their unique business processes. Supporting such a diversity of configured settings and implementations could become difficult as the number of customers we serve grows. In addition, supporting our customers could require us to devote significant development services and support personnel and strain our personnel resources and infrastructure. We have had in the past and may in the future have disputes with customers regarding the performance and implementation of our solutions. If we are unable to address the needs of our customers in a timely fashion, our customers may decide to seek to terminate their relationship, renew on less favorable terms, not renew their maintenance agreements or subscriptions, fail to purchase additional solutions or services, assert legal claims against us or cease to be a reference. If any of these were to occur, our revenues may decline or we may be required to refund amounts to customers and our operating results may be harmed.

Our future growth is, in large part, dependent upon the increasing adoption of revenue management solutions. Revenue management is at an early stage of market development and adoption, and the extent to which revenue management solutions will become widely adopted remains uncertain. It is difficult to predict customer adoption rates, customer demand for revenue management solutions, including our solutions in particular, the future growth rate and size of this market and the timing of the introduction of additional competitive solutions. Any expansion of the revenue management market depends on a number of factors, including the cost, performance and perceived value associated with revenue management solutions. For example, many companies have invested substantial personnel, infrastructure and financial resources in other revenue management infrastructure and therefore may be reluctant to implement solutions such as ours. Additionally, organizations that use legacy revenue management products may believe that these products sufficiently address their revenue management needs. Because this market is relatively undeveloped, we must spend considerable time educating customers as to the benefits of our solutions. If revenue management solutions do not achieve widespread adoption, or if there is a reduction in demand for revenue management solutions caused by a lack of customer acceptance, technological challenges, competing technologies and products, decreases in corporate spending or otherwise, it could result in lower sales, reduced renewal and upsell rates and decreased revenues and our business could be adversely affected.

If we are unable to enhance existing solutions and develop new solutions that achieve market acceptance or that keep pace with technological developments, our business could be harmed.

Our ability to increase revenues from existing customers and attract new customers depends in large part on our ability to enhance and improve our existing solutions and to develop and introduce new solutions. The success of any enhancement or new solutions depends on several factors, including timely completion, adequate quality testing, introduction and market acceptance. Any enhancement or new solutions that we develop (such as our Revenue Cloud and Revenue Management as a Service) or acquire may not be introduced in a timely or cost-effective manner, may contain defects or may not achieve the broad market acceptance necessary to generate significant revenues. If we are unable to successfully enhance our existing solutions and develop new solutions to meet customer requirements, our business and operating results will be adversely affected.

Because we designed our solutions to operate on a variety of network, hardware and software platforms, we will need to continuously modify and enhance our solutions to keep pace with changes in networking, internet-related hardware, and software, communication, browser and database technologies. If we are unable to respond in a timely manner to these rapid technological developments in a cost-effective manner, our solutions may become less marketable and less competitive or obsolete and our operating results may be negatively impacted.

We are highly dependent upon the life sciences industry, and factors that adversely affect this industry could also adversely affect us.

Our future growth depends, in large part, upon continued sales to companies in the life sciences industry. Demand for our solutions could be affected by factors that adversely affect demand for the underlying life sciences products and services that are purchased and sold pursuant to contracts managed through our solutions. The life sciences industry is affected by certain factors, including the emergence of large group purchasing and managed care organizations and



integrated healthcare delivery networks, increased customer and channel incentives and rebates, the shift of purchasing influence from physicians to economic buyers, increased spending on healthcare by governments instead of commercial entities and increased scope of government mandates, frequency of regulatory reporting and audits, and fines. Accordingly, our future operating results could be materially and adversely affected as a result of factors that affect the life sciences industry generally.

Our efforts to expand the adoption of our solutions in the technology industry will be affected by our ability to provide solutions that adequately address trends in that industry.

We are attempting to expand the use of our solutions by companies in the technology industry, and our future growth depends in part on our ability to increase sales of solutions to customers in this industry and potentially other industries. The technology industry is affected by many factors, including shortening of product lifecycles, core technology products being sold into different end markets with distinct pricing, increasing complexity of multi-tiered global distribution channels, changing financial reporting requirements due to channel complexity and increasing use of off-invoice discounting. If our solutions are not perceived by existing or potential customers in the technology industry as capable of providing revenue management tools that will assist them in adequately addressing these trends, then our efforts to expand the adoption of our solutions in this industry may not be successful, which would adversely impact our business and operating results.

Most of our implementation contracts are on a time and materials basis and may be terminated by the customer. The contracts under which we perform most of our implementation services may have a term typically ranging between a few months to up to twelve months and are on a time and materials basis and may be terminated by the customer at any time. If an implementation project is terminated sooner than we anticipated or a portion of the implementation is delayed, we would lose the anticipated revenues that we might not be able to replace or it may take significant time to replace the lost revenues with other work or we may be unable to eliminate the associated costs. Consequently, we may recognize fewer revenues than we anticipated or incur unnecessary costs, and our results of operations in subsequent periods could be materially lower than expected.

Our efforts to expand our solutions into other verticals within the life sciences and technology industries or other industries may not succeed and may reduce our revenue growth rate. Even if we are successful in doing so, such efforts may be costly and may impact our ability to achieve profitability.

Our solutions are currently designed primarily for customers in certain verticals of the life sciences and technology industries and potentially into other industries. Our ability to attract new customers and increase our revenues depends in part on our ability to enter into new industries and verticals. Developing and marketing new solutions to serve other industries and verticals will require us to devote substantial additional resources in advance of consummating new sales or realizing additional revenues. Our ability to leverage the expertise we have developed in the life sciences and technology industries into new industries is unproven and it is likely that we will be required to hire additional personnel, partner with additional third parties and incur considerable research and development expense in order to gain and develop additional expertise for new industries where we lack experience and expertise.

Our efforts to expand our solutions beyond the verticals within the life sciences and technology industries in which we have already developed expertise may not be successful and may reduce our revenue growth rate. Any early stage interest in our solutions in areas beyond the industries we already address may not result in long term success or significant revenues for us. Even if we achieve long-term success in expanding our solutions into other industries and verticals, the costs associated with such expansion may be high, which may impact our ability to achieve profitability. The market for cloud-based solutions is at an early stage of acceptance relative to on-premise solutions, and if it does not develop or develops more slowly than we expect, our business could be harmed.

Although gaining wider acceptance, the market for cloud-based solutions is at an early stage relative to on-premise solutions, and these types of deployments may not achieve and sustain high levels of demand and market acceptance. We plan to accelerate the shift in our business model to recurring revenues, including revenues derived from our cloud-based solutions, by continuing to expand the implementation of our cloud-based solutions both within our current installed base of customers as well as new customers and additional markets in the future. Many companies have invested substantial personnel and financial resources to integrate traditional enterprise software into their businesses, and therefore may be reluctant or unwilling to migrate to a cloud-based solution. Other factors that may affect the market acceptance of cloud-based solutions include:

- perceived security capabilities and reliability;
- perceived concerns about ability to scale operations for large enterprise customers;
- concerns with entrusting a third party to store and manage critical data;

the level of configurability or customizability of the solutions; and  
ability to perform at or near the capabilities of our on-premise solutions.

17

---

If organizations do not perceive the benefits of our cloud-based solutions, or if our competitors or new market entrants are able to develop cloud-based solutions that are or are perceived to be more effective than ours, our plan to accelerate the shift in our business model to recurring revenues may not succeed or may develop more slowly than we expect, if at all, or may result in short-term declines in recognized revenue, any of which would adversely affect our business.

We rely on a small number of third-party service providers to host and deliver our cloud-based solutions, and any interruptions or delays in services from these third parties could impair the delivery of our cloud-based solutions and harm our business.

We currently operate our cloud-based solutions primarily through third party data centers. We do not control the operation of these facilities. These facilities are vulnerable to damage or interruption from natural disasters, fires, power loss, telecommunications failures and similar events. They are also subject to break-ins, computer viruses, sabotage, intentional acts of vandalism and other misconduct. The occurrence of a natural disaster or an act of terrorism, a decision to close the facilities without adequate notice or other unanticipated problems could result in lengthy interruptions, which would have a serious adverse impact on our business. Additionally, our data center agreements are of limited duration, subject to early termination rights in certain circumstances, may include inadequate indemnification and liability provisions, and the providers of our data centers have no obligation to renew their agreements with us on commercially reasonable terms, or at all.

If we continue to add data centers and add capacity in our existing data centers, we may transfer data to other locations. Despite precautions taken during this process, any unsuccessful data transfers may impair the delivery of our service. Interruptions in our service, data loss or corruption may subject us to liability to our customers, cause customers to terminate their agreements and adversely affect our renewal rates and our ability to attract new customers. Data transfers may also subject us to regional privacy and data protection laws that apply to the transmission of customer data across international borders.

We also depend on access to the Internet through third-party bandwidth providers to operate our cloud-based solution. If we lose the services of one or more of our bandwidth providers, or if these providers experience outages, for any reason, we could experience disruption in delivering our cloud-based solutions or we could be required to retain the services of a replacement bandwidth provider. Any Internet outages or delays could adversely affect our ability to provide our solutions to our customers. Our data center operations also rely heavily on the availability of electricity, which also comes from third-party providers. If we or the third-party data center facilities that we use to deliver our services were to experience a major power outage or if the cost of electricity were to increase significantly, our operations and financial results could be harmed. If we or our third-party data centers were to experience a major power outage, we or they would have to rely on back-up generators, which might not work properly or might not provide an adequate supply during a major power outage. Such a power outage could result in a significant disruption of our business.

We license technology from third parties, and our inability to maintain those licenses could harm our business. Certain third-party technology that we use may be difficult to replace or could cause errors or failures of our service.

We incorporate technology that we purchase or license from third parties, including hardware and software, into our solutions. We cannot be certain that this technology will continue to be available on commercially reasonable terms, or at all. We cannot be certain that our licensors are not infringing the intellectual property rights of third parties or that our licensors have sufficient rights to the licensed intellectual property in all jurisdictions in which we may sell our solutions. Some of our agreements with our licensors may be terminated for convenience by them. If we are unable to continue to license any of this technology because of intellectual property infringement claims brought by third parties against our licensors or against us, or if we are unable to continue our license agreements or enter into new licenses on commercially reasonable terms, our ability to develop and sell solutions containing that technology would be severely limited and our business could be harmed. Additionally, if we are unable to license or obtain the necessary technology from third parties, we may be forced to acquire or develop alternative technology of lower quality or performance standards. This would limit and delay our ability to offer new or competitive solutions and increase our costs of production. In addition, errors or defects in third-party hardware or software used in our cloud-based solutions could result in errors or a failure of our cloud-based solutions, which could harm our business.

If we or our solutions fail to perform properly, our reputation and customer relationships could be harmed, our market share could decline and we could be subject to liability claims.

Our solutions are inherently complex and may contain material defects or errors. Any defects in solution functionality or that cause interruptions in availability could result in:

- lost or delayed market acceptance and sales;
- reductions in current-period total revenues;

- breach of warranty or other contract breach or misrepresentation claims;
- sales credits or refunds to our customers;
- loss of customers;
- diversion of development and customer service resources; and
- injury to our reputation.

The costs incurred in correcting any material defects or errors might be substantial and could adversely affect our operating results. Because our customers often use our solutions as a system of record and many of our customers are subject to regulation of pricing of their products or otherwise have complex pricing commitments and revenue recognition policies, errors could result in an inability to process sales or lead to a violation of pricing requirements or misreporting of revenues by our customers that could potentially expose them to fines or other substantial claims or penalties. Accordingly, we could face increased exposure to product liability and warranty claims, litigation and other disputes and claims, resulting in potentially material losses and costs. Our limitation of liability provisions in our customer agreements may not be sufficient to protect us against any such claims.

Given the large amount of data that our solutions collect and manage, it is possible that failures or errors in our software could result in data loss or corruption, or cause the information that we collect to be incomplete or contain inaccuracies that our customers regard as significant. We may be required to issue credits or refunds or indemnify or otherwise be liable to our customers or third parties for damages they may incur resulting from certain of these events. Our insurance may be inadequate or may not be available in the future on acceptable terms, or at all. In addition, our policy may not cover any claim against us for claims related to any product defects or errors or other indirect or consequential damages and defending a suit, regardless of its merit, could be costly and divert management's attention. The market in which we participate is highly competitive, and if we do not compete effectively, our operating results could be harmed.

The market for revenue management solutions is highly competitive, fragmented and subject to rapid changes in technology. We face competition from spreadsheet-assisted manual processes, internally developed solutions, large integrated systems vendors, providers of business process outsourcing services and smaller companies that offer point solutions.

Companies lacking IT resources often resort to spreadsheet-assisted manual processes or personal database applications. In addition, some potential customers, particularly large enterprises, may elect to develop their own internal solutions, including custom-built solutions that are designed to support the needs of a single organization. Companies with large investments in packaged ERP or CRM applications, which do not typically provide revenue management capabilities, may extend these horizontal applications with configurations or point solution applications in order to address one or a small set of revenue management sub processes or drivers. Common horizontal applications that customers attempt to configure for this purpose in the life sciences and technology industries include large integrated systems vendors like SAP AG and Oracle Corporation. We also encounter competition from small independent companies, which compete on the basis of price, unique product features or functions and custom developments.

Many of our competitors have greater name recognition, larger sales and marketing budgets and greater resources than we do and may have pre-existing relationships with our potential customers, including relationships with, and access to, key decision makers within these organizations, and major distribution agreements with consultants and system integrators. Moreover, many software vendors could bundle solutions or offer them at a low price as part of a larger product sale.

With the introduction of new technologies and market entrants, we expect competition to intensify in the future. We also expect enterprise software vendors that focus on enterprise resource planning or back-office applications to enter our market with competing products. In addition, we expect sales force automation vendors to acquire or develop additional solutions that may compete with our solutions. If we fail to compete effectively, our business will be harmed. In addition, pricing pressures and increased competition generally could result in reduced sales, reduced margins, losses or the failure of our solutions to achieve or maintain more widespread market acceptance, any of which could harm our business.

If we are not able to maintain and enhance our brand, our business and operating results may be adversely affected.

We believe that maintaining and enhancing the “Model N” brand identity is critical to our relationships with our customers and partners and to our ability to attract new customers and partners. The successful promotion of our brand will depend largely upon our marketing efforts, our ability to continue to offer high-quality solutions and our ability to successfully differentiate our

solutions from those of our competitors. Our brand promotion activities may not be successful or yield increased revenues. In addition, independent industry analysts often provide reviews of our solution, as well as those of our competitors, and perception of our solution in the marketplace may be significantly influenced by these reviews. If these reviews are negative, or less positive as compared to those of our competitors' products and services, our brand may be adversely affected.

The promotion of our brand requires us to make substantial expenditures, and we anticipate that the expenditures will increase as our market becomes more competitive and as we expand into new verticals within the life sciences and technology industries. To the extent that these activities yield increased revenues, these revenues may not offset the increased expenses we incur. If we do not successfully maintain and enhance our brand, our business may not grow, we may have reduced pricing power relative to competitors with stronger brands and we could lose customers and partners, all of which would adversely affect our business operations and financial results.

If we are unable to maintain successful relationships with system integrators, our business operations, financial results and growth prospects could be adversely affected.

Our relationships with system integrators are generally non-exclusive, which means they may recommend to their customers the solutions of several different companies, including solutions that compete with ours, and they may also assist in the implementation of software or systems that compete with ours. If our system integrators do not choose to continue to refer our solutions, assist in implementing our solutions, choose to use greater efforts to market and sell their own solutions or those of our competitors, or fail to meet the needs of our customers, our ability to grow our business and sell our solutions may be adversely affected. The loss of a substantial number of our system integrators, our possible inability to replace them or the failure to recruit additional system integrators could harm our business. Our ability to achieve revenue growth in the future will depend in part on our success in maintaining successful relationships with our system integrators and in helping our system integrators enhance their ability to independently market and implement our solutions. Our growth in revenues, particularly in international markets, will be influenced by the development and maintenance of relationships with these companies. Although we have established relationships with some of the leading system integrators, our solutions compete directly against the solutions of other leading system integrators. We are unable to control the resources that our system integrators commit to implementing our solutions or the quality of such implementation. If they do not commit sufficient resources to these activities, or if we are unable to maintain our relationships with these system integrators or otherwise develop and expand our indirect distribution channel, our business, results of operations, financial condition or cash flows could be adversely affected. Any failure to offer high-quality customer support cloud platform services may adversely affect our relationships with our customers and harm our financial results.

Once our solutions are implemented, our customers use our support organization to resolve technical issues relating to our solutions. In addition, we also believe that our success in selling our solutions is highly dependent on our business reputation and on favorable recommendations from our existing customers. Any failure to maintain high-quality customer support, or a market perception that we do not maintain high-quality support, could harm our reputation, adversely affect our ability to maintain existing customers or sell our solutions to existing and prospective customers, and harm our business, operating results and financial condition.

We may be unable to respond quickly enough to accommodate short-term increases in customer demand for support services. Increased customer demand for these services, without corresponding revenues, could also increase costs and adversely affect our operating results.

If our solutions do not interoperate with our customers' IT infrastructure, sales of our solutions could be negatively affected, which would harm our business.

Our solutions must interoperate with our customers' existing IT infrastructure, which often have different specifications, complex configuration, utilize multiple protocol standards, deploy products from multiple vendors and contain multiple generations of products that have been added over time. As a result, when problems occur in a network, it may be difficult to identify the sources of these problems. If we find errors in the existing products or defects in the hardware used in our customers' IT infrastructure or problematic network configurations or settings, we may have to modify our solutions or platform so that our solutions will interoperate with our customers' IT infrastructure. Any delays in identifying the sources of problems or in providing necessary modifications to our



solutions could have a negative impact on our reputation and our customers' satisfaction with our solutions, and our ability to sell solutions could be adversely affected.

Incorrect or improper implementation or use of our solutions could result in customer dissatisfaction and negatively affect our business, operations, financial results and growth prospects.

Our customers and third-party partners may need training in the proper use of and the variety of benefits that can be derived from our solutions to maximize their potential. We have implemented the Model N Align Program, which gives our customers full access to expert knowledge through a portal for easy and fast access to information, experienced customer success managers and defined customer success plans, in order to help our customers maximize the value of our solutions. However, our customers may choose not to use such programs or may not use such programs efficiently or effectively and as a result may become dissatisfied with our solutions. If our solutions are not implemented or used correctly or as intended, inadequate performance may result. Since our customers rely on our solutions and customer support to manage key areas of their businesses, the incorrect or improper implementation or use of our solutions, our failure to train customers on how to efficiently and effectively use our solutions or our failure to provide services to our customers, may result in negative publicity, failure of customers to renew their SaaS maintenance agreements or subscriptions or potentially make legal claims against us. Also, as we continue to expand our customer base, any failure by us to properly provide these services will likely result in lost opportunities for follow-on sales of our solutions.

Competition for our target employees is intense, and we may not be able to attract and retain the quality employees we need to support our planned growth.

Our future success depends, in part, upon our ability to recruit and retain key management, technical, sales, marketing, finance, and other critical personnel. Competition for qualified management, technical and other personnel is intense, and we may not be successful in attracting and retaining such personnel. If we fail to attract and retain qualified employees, including internationally, our ability to grow our business could be harmed. Competition for people with the specific skills that we require is significant. In order to attract and retain personnel in a competitive marketplace, we believe that we must provide a competitive compensation package, including cash and equity-based compensation. Volatility in our stock price may from time to time adversely affect our ability to recruit or retain employees. If we are unable to hire and retain qualified employees, or conversely, if we fail to manage employee performance or reduce staffing levels when required by market conditions, our business and operating results could be adversely affected. Our significant international operations subject us to additional risks that can adversely affect our business, results of operations and financial condition.

We have significant international operations, including in emerging markets such as India, and we are continuing to expand our international operations as part of our growth strategy. As of September 30, 2018, approximately 47% of our total employees were located in India, where we conduct a portion of our development activities, implementation services and support services. Our current international operations and our plans to expand our international operations have placed, and will continue to place, a strain on our employees, management systems and other resources.

Operating in international markets requires significant resources and management attention and will subject us to regulatory, economic and political risks and competition that are different from those in the United States. Because of our limited experience with international operations, we cannot assure you that our international expansion efforts will be successful or that returns on such investments will be achieved in the future. In addition, our international operations may fail to succeed due to other risks inherent in operating businesses internationally, including:

- our lack of familiarity with commercial and social norms and customs in countries which may adversely affect our ability to recruit, retain and manage employees in these countries;
- difficulties and costs associated with staffing and managing foreign operations;
- the potential diversion of management's attention to oversee and direct operations that are geographically distant from our U.S. headquarters;