ASTEA INTERNATIONAL INC
Form 10-K
March 29, 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: December 31, 2017

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: 0-26330

ASTEA INTERNATIONAL INC.
(Exact name of registrant as specified in its charter)

Delaware	23-2119058
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
240 Gibraltar Road, Horsham, Pennsylvania	19044
(Address of principal executive offices)	(Zip Code)

Registrant's telephone number, including area code: (215) 682-2500

Securities registered pursuant to Section 12(b) of the Act: NONE
Securities registered pursuant to Section 12(g) of the Exchange Act:

Title of Each Class:	Name of Each Exchange on which Registered:
Common Stock, $0.01 Par Value Per Share	The OTC Markets Group Inc.

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 Section 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K 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 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	(Do not check if a smaller reporting company)	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.

The aggregate market value of the common stock held by non-affiliates of the registrant as of June 30, 2017 (based on the closing price of $2.25 as reported by the OTCQB marketplace of the OTC Markets Group, Inc. as of such date) was $1,764,200. For purposes of determining this amount only, the registrant has defined affiliates of the registrant to include the executive officers and directors of registrant and holders of more than 10% of the registrant's common stock on June 30, 2017.

As of March 27, 2018, 3,594,549 shares of the registrant's Common Stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the definitive Proxy Statement for the 2018 Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K.

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PART I

FORWARD-LOOKING STATEMENTS

This Annual Report on Form 10-K may contain, in addition to historical information, forward-looking statements. These forward-looking statements are based on the Company's current assumptions, expectations and projections about future events. Words like "believe," "anticipate," "intend," "estimate," "expect," "project," "may," "could," "would," "will," "should," "can," "can have," "likely," the negatives thereof and similar expressions are used to identify forward-looking statements, although not all forward-looking statements contain these words. These forward-looking statements are estimates reflecting the best judgment of the Company's management and actual events or results may differ materially from the results anticipated in these forward-looking statements as a result of a variety of factors. While it is impossible to identify all such factors, factors that could cause actual results to differ materially from those estimated by us include:

- each of the factors discussed in Item 1A of this Annual Report on Form 10-K, Risk Factors, as well as risks discussed elsewhere in this report;
- our ability to recruit and retain key technical and management personnel;
- changes in existing laws;
- our ability to expand our customer base;
- infringement on the proprietary rights of our property and the rights of others;
- competitive pricing pressures in the service management industry and our responses to those pressures;
- our ability to develop new products on a timely basis that keep pace with new technological developments;
- our increased dependence on technology from third parties; and
- our ability to expand our products into international markets.

Many of these factors are beyond our ability to predict or control. In addition, as a result of these and other factors, our past financial performance should not be relied on as an indication of future performance. The cautionary statements referred to in this section also should be considered in connection with any subsequent written or oral forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. In light of these risks and uncertainties, the forward-looking events and circumstances discussed in this report might not occur. Furthermore, we cannot guarantee future results, events, levels of activity, performance, or achievements.

The Company is not under any obligation and does not intend to make publicly available any update or other revision to any forward-looking statements to reflect circumstances existing after the date of this Annual Report on Form 10-K or to reflect the occurrence of future events even if experience or future events make it clear that any expected results expressed or implied by these forward-looking statements will not be realized.

Item 1. Business.

General

Astea International Inc. and its subsidiaries (collectively "we," "us," "our," "Astea" or the "Company") develop, market and support service management software solutions, which are licensed to companies that sell and service equipment, and/or sell and deliver professional services. Customers purchase Astea's software and services to automate enterprise business processes to enhance revenue, contain costs, improve operational efficiency improvement, and expand their awareness of operational performance through analytical reporting. Customers' return on investment from implementing Astea's solutions is achieved through more efficient management of information, people, processes and cash flows, which we believe increases competitive advantage and customer satisfaction as well as top-line revenue and profitability.

Astea's solutions are used in industries such as information technology, medical devices and diagnostic systems, industrial controls and instrumentation; retail/point-of-sale equipment; heating, ventilation, and air conditioning systems ("HVAC"); office equipment; imaging systems; fire and security; gaming/leisure equipment; facilities management; telecommunications; and other related industries with equipment sales and service requirements. Astea's strong focus on enterprise solutions for organizations that sell and deliver services is a unique industry differentiator that draws upon the Company's extensive industry experience and core expertise.

Founded in 1979, Astea is known throughout the industry, largely from its proven success as a provider of software solutions for field service management. Astea has since expanded its product portfolio to also include integrated management applications for sales, multi-channel customer contact centers, third party vendor management, workforce optimization and professional services automation.

Astea offers all the cornerstones of service lifecycle management, including customer management; service management; asset management; complete forward and reverse logistics management; and mobile workforce management with enhanced scheduling optimization and actionable business intelligence. We believe this comprehensive approach provides unmatched expertise in service lifecycle workflow and integration needs throughout the service continuum. Astea's solutions empower companies by making more actionable data readily accessible, providing companies the agility needed to achieve sustainable value more quickly and to compete successfully in a global community.

Astea's software has been licensed to approximately 665 companies worldwide. Its customers range from mid-size organizations to large, multinational corporations with geographically dispersed locations around the globe. The Company markets and supports its products through a worldwide network of direct and indirect sales and services offices with corporate headquarters in the United States and regional headquarters in the United Kingdom, Australia and Japan. Sales partners include distributors (value-added resellers, system integrators and sales agents) and original equipment manufacturing partners ("OEM partners"). See Note 12 to the Consolidated Financial Statements Geographic Segment Data for revenues, income (loss) from operations and long lived assets related to each of the Company's geographic operating regions for the past two years.

In addition to its own product development that is conducted at Company facilities in the United States and Israel, Astea has contractual relationships with complementary technology companies in order to reduce time-to-market with new product capabilities and continually increase its value proposition to customers. The Company's product strategies are developed from the collective feedback from customers, industry consultants, technology partners and sales partners, in addition to its internal product management, professional services, and development teams. Astea also works with its active user community who closely advises and participates in ongoing product development efforts.

Astea provides customers with an array of professional consulting, training and customer support services to implement its products and integrate them with other corporate systems such as back-office financial and enterprise resource planning (ERP) applications. Astea also maintains and supports its software over the software's installed life cycle. The Company's experience and domain expertise in service and sales management, distribution, logistics, finance, mobile technologies, internet applications and enterprise systems integration are made available to customers during their assessments of where and how their business processes can be improved.

The Company's sales and marketing efforts are primarily focused on new software licensing and support services for its latest generation of Astea Alliance and FieldCentrix products.

Industry Overview – Field Service Management

Field Service Management is generally defined as a technician performing repair, installation, or maintenance activities at a customer site. It involves the manual or automated creation and management of incoming service requests, scheduling and dispatching of service technicians, coordinating parts planning, delivery and usage, managing contracts, meeting service level agreements based upon problem severity and impact, and the repair, refurbishment and retirement process for assets. This definition is increasingly expanding to include remote maintenance and predictive maintenance performed by both a technician or intelligent technology (if such activities fall within a standard service contract). Field service organizations vary greatly in size, industries and supported technologies. Although every industry relies on field service to some degree, for certain industries, field service is critical. Equipment, ranging from computers and peripherals to building systems, office equipment and medical equipment depends on field service. Sometimes this equipment is the lifeblood of a customer or potential customer, and any downtime or service interruption can significantly impair operations or even endanger human life and safety.

Today's service-driven enterprises must plan and manage complex service delivery on a global scale. They must be sensitive to an ever more demanding customer and be effective at using new business processes to service an

increasingly more complex and connected set of intelligent assets. The benefits of implementing service management solutions are applicable in virtually every service organization, regardless of type, size, or geography served.
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Current Product Offerings

Astea Alliance

Astea Alliance is a service management offering that includes both software applications and services. The software product consists of a series of applications. The offering has been developed as a global solution for large, complex, service-driven organizations who often require multi-lingual and multi-currency capabilities in both the cloud and on-premises.

Astea Alliance has been designed to address the complete service lifecycle, from lead generation and project quotation to service and billing through asset retirement. It integrates and optimizes critical business processes for Campaigns, Call Center, Depot Repair, Field Service, Logistics, Projects and Sales and Order Processing applications. Astea extends its application suite with mobile workforce management, dynamic scheduling optimization, third party vendor and customer self-service portals, and business intelligence. In order to ensure customer satisfaction and quick return on investment, Astea also offers infrastructure tools and services.

In 2017, Astea issued Astea Alliance Version 14.5. This release represented a major step in unifying and connecting all service stakeholders—both within and outside of an organization—into one cohesive service ecosystem focused on delivering superior service outcomes for a company and its customers. Designed to share information and data effortlessly through more physical and digital mediums that previously were not possible, Astea Alliance Version 14.5 provides extensive connectivity designed to strengthen the relationship between a service provider and its customer: portals that provide a 360 degree view of the relationship; the ability to leverage contingent worker job markets; seamless scheduling of employee, third party and contingent workers within one environment; and a best-in-class mobile experience for technicians, subcontractors and customers.

The market's response to Alliance version 14.5 includes a prestigious award from Frost & Sullivan, a well-recognized industry focused firm, which granted us the 2017 Customer Value Leadership Award for Mobile Workforce Management.

A summary of features released with Astea Alliance 14.5 are highlighted below. They include:

- Give Customers Visibility and Control over their Service Experience The Alliance Mobile Customer Portal breaks down the traditional barriers between service providers and customers. Organizations can now provide customers with a convenient mobile portal where they can interact with their service partner in real-time using intuitive technology that is accessible anytime, anywhere, on nearly any mobile device. In the Alliance Mobile Customer Portal, clients can self-service a variety of tasks: create and edit service orders; view contract quotations; view invoices and activities; and visualize the service technician traveling in real time. Customers can also search the Knowledge Base for answers to service issues, which may prevent the dispatching of a technician, further reducing service costs and freeing up limited resources. The Alliance Mobile Customer Portal also enables service organizations to upsell, resell and cross-sell to customers, thereby adding new revenue streams at no additional cost.

- Augment Your Mobile-First Strategy with Modern Mobile Experiences for All Workforces - Included in this release is the newest version of Astea's mobile application, Alliance Mobile Edge, which utilizes the latest in mobile development technology and design principles. While Alliance Mobile Edge delivers the features and functionality that native field technicians require, the new Vendor Mobile application offers a streamlined version that is designed for third party workers. Alliance Vendor Mobile answers the market's increasing need to provide seamless connectivity with contingent workers. It also ensures that a contingent workforce has access to the same tools as native workers; the end result of which is greater efficiency and productivity across an entire service organization and a seamless, cohesive customer experience.

- Leverage a Contingent Workforce in a Cohesive, Efficient Way - The use of contingent workers is a growing trend in the field service industry, because it offers numerous benefits. Contingent workers can only deliver these benefits if organizations can use them in a cohesive, seamless manner that aligns with their own service standards. The new version of Alliance enables companies to leverage any type of worker in the most effective way, and then monitor their performance as if the employee was their own. Service companies can consider the best and most cost-effective mix of native, third party and contingent workers when scheduling and dispatching right within the Alliance platform. In addition, contingent workers stay connected to the back office in real-time, giving service organizations visibility into all field workers and enabling them to schedule, monitor performance and bill more efficiently.

- Optimize Schedules across All Workforces and Align with Parts Delivery - The latest version of Alliance delivers significant enhancements to its Dynamic Scheduling Engine (DSE) and Dispatching Console so that organizations can optimize schedules across all of its workers, control and reduce costs, and meet customers' increasing demands for tighter appointment windows. These capabilities allow service organizations to not just optimize schedules and costs, but also differentiate their service experience from other competitors in their market.

The current Astea Alliance offering consists of:

- Core Applications;
- Mobile Applications;
- Extended Portals;
- Reporting and Business Intelligence; and
- Tools.

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Astea Alliance Core Applications:

Alliance Contact Center
Alliance Depot Repair
Alliance Field Service
Alliance Logistics
Alliance Order Processing
Alliance Professional Services
Alliance Sales
Alliance Dynamic Scheduling Engine
Alliance Workforce Planning

Astea Alliance Mobile Applications:

Alliance Mobile – Laptop/ Smartphones/Tablets
Alliance Third Party Vendor Mobile
Alliance 2-way Paging

Astea Alliance Extended Portals:

Alliance Customer Self-Service
Alliance Vendor & Third Party Management

Astea Alliance Reporting and Business Intelligence:

Alliance Reporting
Alliance Business Intelligence

Astea Alliance Tools:

Alliance Link
Alliance Knowledge Base

Astea Alliance Core Applications

The Alliance Contact Center application supports call centers, information desks, service hotlines, inside sales and telemarketing activities. Integrated multi-channel inbound/outbound capabilities enable customer service representatives to serve prospects and customers in their media of choice, including phone, fax, e-mail or Internet. Integrated customer self-service portals with automated e-mail response, automated call escalation and interface to Computer Telephony Integration systems help streamline customer interaction processes. Work scheduling and demand balancing optimize staff utilization. Employee portals with access to comprehensive real-time customer data and decision support tools including intelligent knowledge management and scripting for problem resolution, drive higher staff productivity. The objectives of Astea's Alliance Contact Center software are to reduce overhead through improved first-call resolution rates and shorter service-call handling times, as well as more efficient customer service and higher levels of customer satisfaction. A knowledge engine enhances the diagnostic tools available to contact center agents. This knowledge engine is also available in other areas of the solution suite such as Depot Repair and Field Service.

Alliance Depot Repair

Alliance Depot Repair automates the tracking of assets through equipment calibration and repair chains, including merchandise ownership, location, repair status and warranty coverage. Objectives are to gain real-time visibility of all repair chain activities, ensure compliance with warranty and contractual agreements, respond to customer inquiries with up-to-the-minute repair status, collect and analyze repair statistics for product design improvement, and reduce overhead such as inventory carrying costs. Applications support in-house, subcontractor and vendor calibration and repair; customer and vendor exchanges and advance exchanges; equipment on loan; change of ownership; merchandise shipments, cross shipments and pickups; consolidated repair orders; and, storage and refurbishment programs. Integration with other Astea Alliance modules allows repair orders and repair status queries to be initiated from customer contact centers, field service, field sales and warehouses as well as the repair depot.

Alliance Field Service

The Alliance Field Service core application delivers a set of automated capabilities intended to streamline and improve management of field service activities. By automating workflow, field service representatives should be able to efficiently complete and document assignments, manage vehicle assets, capture expenses and generate revenue through add-on sales during a customer contact. Applications alert dispatchers to contractual minimum response times and expedite coordination of field force skills matching, scheduling, dispatch and repair parts logistics. The use of the Dynamic Scheduling Engine automates much of this process. The software supports all field service categories including equipment project installations, break/fix activities, planned maintenance and predictive maintenance. Applications can be integrated with equipment diagnostic systems for fully automated solutions that initiate and prioritize service requests and dispatch assignments to field employees' smartphones, laptops or tablets without human intervention, or that facilitate remote maintenance activities.

The latest version of Alliance delivers significant enhancements to the Field Service core application's Dispatch Console, enabling organizations to optimize schedules across all workers, including employees, third party and contingent workers. This allows organization to control and reduce costs and meet customers' increasing demands for tighter appointment windows using a wider range of workers. In addition to optimizing schedules across all workforces, the Dispatch Console now offers "just-in-time service" which coordinates the schedule of each technician with the parts delivery date.

Alliance Logistics

The Alliance Logistics core application is divided into three functional portals. These are Supply Chain, Inventory Management and Reverse Supply Chain, reflecting the diversity of needs in this area. Seamlessly integrated with sales and service applications, Alliance Logistics enables service organizations to control inventory costs, manage assets and implement proactive service management strategies. Automated calculation of stock profiles based on usage eliminates overstocking and dramatically reduces costs associated with storing, depreciating, and insuring inventory. The application supports parts and tools management for effective field service delivery and Service Level Agreements compliance. We believe that improved cost management improves cash flow by streamlining and shortening the cycles from inventory to usage to billing and collection. Lower logistics costs create opportunities to recognize higher margins on products and services. Key areas to apply Alliance Logistics include asset management, field service parts/tools management, demand fulfillment and sales fulfillment.

Alliance Order Processing

The Alliance Order Processing module provides straightforward functionality for the management of quotations and order fulfillment. Quotations can be created for the sale of products and the provision of field services. Integration with the approvals process and the Logistics and Field Service modules ensures efficient management control and sustainable promises for delivery. This application is ideally suited to the sale of "consumable products" in association with the provision of equipment-based services, but can be equally applied to the supply of finished products resulting from up-sell and cross-sell opportunities.

Alliance Professional Services

Alliance Professional Services supports management of knowledge workers, such as those deployed by professional services organizations and internal service departments of large organizations. Functionality focuses on planning, deploying and invoicing service engagements that can extend for days, weeks, months and years. Applications are expected to improve resource planning and allocation, workflow management, consultant time and expense reporting, subcontractor and vendor invoice processing, customer billing and visibility of service engagements. Integration with other Astea Alliance modules delivers an end-to-end solution to market, sell, manage and bill professional services.

Capabilities to share sales, service, project, and post-project field service data across the enterprise, generally enables professional services organizations to operate with less overhead, improved cash flow, higher profitability, and more competitive bidding.

Alliance Sales

Alliance Sales consolidates and streamlines the sales processes of an enterprise, from quote generation through order processing, at all points of customer contact including field sales, inside sales, contact center sales and field service sales. Lead-to-close sales process capabilities include integration with customer support and field service applications, leveraging all enterprise knowledge pools with the goal to increase sales opportunities, margins and close rates. Consolidated views of sales and service data also provide a clearer understanding of enterprise operations to drive strategic business decisions. Sales force automation application automates business rules and practices such as enterprise-defined sales methodologies, sales pipeline management, territory management, contact and opportunity management, forecasting, collaborative team selling and literature fulfillment. Other Alliance applications, such as our mobility solutions, prompt customer support and service staff to up-sell and cross-sell during contact with customers.

Alliance Dynamic Scheduling Engine ("Alliance DSE")

Alliance DSE is the next level of field service scheduling solutions for a new era of service management. It is a real-time scheduling solution designed to optimize and balance the tradeoffs between service cost and level of service, in accordance with management's philosophy. It addresses the specific challenges of field service scheduling, while simultaneously calculating ways to increase efficiency, accuracy and profitability with the goal to help users sustain a competitive advantage in today's customer experience-oriented market place. One key differentiator for the Astea Alliance DSE is its ability to calculate the most efficient route and schedule by blending traditional break/fix activities with preventive maintenance activities, project activities and predictive maintenance, while also factoring in how unplanned maintenance activities influence the need for future planned service activities.

With the Astea Alliance Version 14.5 release, the DSE application was enhanced to help companies more efficiently schedule service activities across all types of workers available in today's market, which includes employees, and third party and contingent workers. The use of contingent workers is a major trend in the field service industry as it offers service organizations numerous benefits including: flexibility and agility; overcoming geographic limitations; ability to scale with business expansion in a cost-effective manner; and the ability to meet growing customer demands. We believe that Alliance DSE provides maximum flexibility that enables companies to proactively drive, manage and monitor all technicians through demand forecasting, workforce profiling, and operational optimization.

Alliance Workforce Planning

Workforce Planning assists in forecasting workforce requirements based on planned and unplanned orders and tracks actual results against the plan. Multiple workforce plans can be created, and plans can be maintained for different groups of resources and/or different planning periods. The Workforce planning module is flexible and can be leveraged to create plans that are comprised of days dedicated to only unplanned work, or the workforce can be allocated a percentage of planned work to be accomplished. Workforce demands for service technicians are not always consistent from period to period or from branch to branch. This often times creates a surplus of manpower in some locations and a shortage in others. Based on an Alliance Workforce plan, personnel can be temporarily transferred to another branch or action group to absorb the additional workload. A workforce plan shows the daily available hours for labor, and compares these to the daily activities from both planned and unplanned selected sources, including PM schedules, field change orders, project demands, committed sales orders and unplanned work. Plans can be frozen to compare actual time spent against the frozen plan to track performance.

Astea Alliance Mobile Applications

Astea's Alliance Mobility Suite consists of Alliance Mobile Select, which is Astea's original mobile solution supporting Windows Mobile devices and Windows laptops, Alliance Mobile Universal, Alliance Third Party Vendor Mobile and the newest addition, Alliance Mobile Edge.

Alliance Mobile Edge - Alliance Mobile Edge utilizes the latest in mobile development technology and design principles to help companies increase user adoption, boost technician productivity, improve service margins and contract profitability, and deliver a superior user experience. Alliance Mobile Edge simplifies the complexity of today's service experience by combining deep functionality, robust customer and asset lifecycle information, and powerful new emerging technology with highly-configurable interfaces, workflow rules and reporting. The result is a platform designed to enhance technician effectiveness and efficiency in every possible way, including the ability to create a digital work environment that suits each technician's affinity for technology and speed of learning.

Astea Alliance Mobile Edge sets a new standard in mobile workforce management, offering industry leading features and benefits, including:

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A Sleek, Intuitive User Interface Inspired by the Latest Google Material Design Principles: Technicians will execute their workflow, interact with information and launch productivity-enhancing applications through a sleek new user interface (UI) inspired by Google's Material Design principles. The familiarity of this design aids in easy adoption and allows users to intuitively understand how to interact with the application, minimizing the number of screen touches for greater efficiency. Alliance Mobile Edge leverages the latest mobile technology infrastructure, making it more powerful than ever before, with faster rendering, automatic landscape and portrait orientation changes, embedded legends, intelligent help screens and numerous other features designed to enhance user satisfaction.

- Unprecedented Configuration Capabilities: Alliance Mobile Edge puts the power to customize the work environment in the hands of business users. Non-technical users can now mirror the most efficient and effective way of working through robust configuration settings. Administrators, managers or supervisors can configure the application to accommodate the needs of each individual worker. The Mobile Edge customizer allows organizations to balance universal settings and workflows with local requirements by function, region, business unit, customer group or skill set. New users can start in "simple mode" utilizing only basic functions, before experience and training allows them to move into "slim" or "full mode" where additional capabilities are available. This gives workers a natural progression designed to ease them into the application, all while working in a way that accommodates an organization's need for standardization and consistency.

- Easy-to-Use Productivity Tools for Faster Learning and Greater End User Adoption: Every aspect of Alliance Mobile Edge was designed to allow technicians to focus on their job—not on the technology that supports it. Technician-enhancing tools, including team and crew collaboration, "Google-like" knowledge base search results, augmented reality and Artificial Intelligence, are all at their fingertips. These features are designed to help engineers diagnose problems, make repairs, perform preventative maintenance and resolve customer issues quickly, even if they have never before worked with a piece of equipment. Alliance Mobile Edge was designed to help overcome the challenges of an aging workforce, the ever growing number of increasingly complex new assets in the field, and new worker inexperience.

Alliance Mobile Edge is optimized to operate with the latest devices in the market including Android smartphones and tablets, iPhones, and iPads. Organizations can choose the device that works best for their environment and still be able to leverage the most powerful mobile solution designed specifically for the way field technicians work.

Alliance Third Party Vendor Mobile

While Alliance Mobile Edge delivers all the features and functionality that native field technicians require, the new Alliance Third Party Vendor Mobile application offers a streamlined version designed for third party workers to use when processing their service order assignments. Alliance Third Party Vendor Mobile answers the market's increasing need to provide seamless connectivity with third party and contingent workers. It also ensures that a contingent workforce has access to the same tools as native workers; the end result of which is greater efficiency and productivity across an entire service organization and a seamless, cohesive customer experience.

Astea Alliance Extended Portals

Alliance Customer Portal

The Alliance Customer Portal enables service companies to give today's highly demanding customers what they want—greater visibility into and control over their service experience. It also enables them to reduce costs by shifting customer service activities to a less expensive channel. The Alliance Customer Portal is a secure, multi-level entry point web or native application environment that facilitates service, sales and account management activities without the need for direct employee involvement. It empowers the service organization's end customers to take actions that benefit both parties. It reduces routine phone calls, emails and other communications to customer contact centers, freeing up resources for those customers that do have needs which can only be met by a real service representative. The pre-defined Entry-Level, Standard and Enterprise profiles, in connection with a security utility, are designed to ensure tight control on access to sensitive data and a range of configurable features. The portal also provides another channel to promote and sell more products and services to an existing customer base, thereby adding new revenue streams at no additional cost. The customer portal can delay or eliminate needs for contact center expansion and associated increases in facility, equipment and staffing costs.

Alliance Mobile Customer Portal

With the release of Alliance Version 14.5, Astea introduced a new Mobile Customer Portal that allows a company's end customer to access the Alliance Customer Portal from an Android or iOS mobile device. Companies can now provide customers with a convenient mobile portal where they can interact with their service provider in real-time using intuitive technology that is accessible anytime, anywhere, on nearly any mobile device. In the Alliance Mobile Customer Portal, clients can self-service a variety of tasks: create and edit service orders; view contract quotations; view invoices and activities; and visualize the service technician traveling in real time. Customers can also search the Knowledge Base for answers to service issues, which may prevent the need to dispatch a technician, further reducing service costs and freeing up limited resources.

Alliance Vendor & Third Party Management Portal

The Vendor & Third Party Management portal enables companies to manage their external vendors and third party service providers with a robust, secure and unified platform. This portal can now serve as their single point of information for all full-time and out-sourced stakeholders. As a result, they will have the necessary level of upstream and downstream visibility and accountability that is a critical stepping stone to better service network automation and optimization. Whether that third party is an external service agent or a vendor that supplies parts, they will now be able to track and manage all of the parties that participate in your service supply chain. Their vendors and external service agents will have access to a secure portal that allows them to enter, update and view pertinent information as it relates to a service order and logistics and reverse logistics functions. Service organizations are able to easily interconnect their entire service lifecycle ecosystem to eliminate redundant processes and drive ongoing efficiencies. Additionally, organizations benefit by increased visibility, collaboration and communication.

Astea Alliance Reporting and Business Intelligence ("Alliance BI")

For proactive service management, Alliance BI provides highly visual, real-time analysis of business performance, focusing on key performance indicators—a tool that facilitates businesses' understanding of customer behavior. Alliance BI enables the viewing of information for the entire enterprise, increasing revenues and identifying new business opportunities. Alliance BI has been designed to ensure that users of all kinds have immediate access to crucial information whenever it's needed. In the boardroom, at agent level, or even for customers, this tool effortlessly allows the viewing of performance data such as performance against service level agreements, contract profitability, product failure rate, repair turnaround times, customer satisfaction and engineer efficiency. Reports allow businesses to see how many orders have met their contractual service estimated time of arrival and how many failed, which helps organizations better understand customer satisfaction. Workloads show the available working hours at a specific location in contrast to the demand for workforce planning and optimization.

Astea Alliance Tools

Alliance Link

Alliance Link is an enterprise application integration product that interfaces Astea Alliance to other enterprise systems, such as back-office financial and ERP applications, remote equipment monitoring and diagnostic software, and wireless data transmission services. Alliance Link extends Astea Alliance's return on investment for customers by making all Alliance modules accessible to external software through web services and open, well defined, synchronous and asynchronous application programming interfaces that are extensible Markup Language ("XML") based.

Alliance Knowledge Base

Alliance Knowledge Base provides powerful and scalable enterprise search functionality for corporate content, across a network or on a portal, intranet or Internet site, or mobile device. Delivering single-point access to enterprise-wide data collections; full-text searches can be conducted quickly and easily across disparate data sources, improving knowledge retention and sharing across the organization. Alliance Knowledge Base offers advanced functionality for entering queries and results navigation to help users quickly find the information they need. Alliance Knowledge Base can provide user-friendly access to a vast range of information, including product manuals, technical support documentation, maintenance histories, repair notes, announcements, and much more. With search functionality, Alliance Knowledge Base becomes much more than simply an operations tool; it provides organizations the capability to share all sorts of information, improve problem resolution times, and improve the quality of decision-making across an organization.

FieldCentrix Enterprise Suite

The FieldCentrix Enterprise is a service management solution that runs on a wide range of mobile devices, and integrates seamlessly with popular customer relationship management (CRM) and enterprise resource planning (ERP) applications. Add-on features include a web-based customer self-service portal, workforce management capabilities, and equipment-centric functionality. FieldCentrix has licensed applications to companies in a wide range of sectors including HVAC, building and real estate services, manufacturing and process instruments and controls, and medical equipment.

In 2017, Astea released FieldCentrix Version 7. This release supported the core themes of the Company's product development strategy by enhancing usability, facilitating easier administration of the software, and driving further cloud deployment adoption. Highlights of this release include:

- A streamlined, flexible interface that matches the preferences of today's end users;
- Technical updates to certain applications to support operation on today's most popular browsers;
- Appearance enhancements that support better internal branding for customers; and
- The ability to adopt business logic through configuration settings, minimizing the need for customization.

These enhancements were guided by our longstanding design principles, which state that customers should be able to adopt new capabilities when they are ready and that all new updates should remain highly compatible with existing customer systems, making upgrading to newer releases easy.

The current FieldCentrix Enterprise offering consists of:

- FX Service Center;
- FX Mobile;
- FX e-Service;
- FX Fleet Manager;
- FX Interchange;
- FX Interchange for JD Edwards; and
- FX Mobility Express.

FX Service Center

FX Service Center is an Internet-based service management and dispatch solution that gives organizations command over their field service operation in order to more effectively manage call taking, entitlement verification, field personnel scheduling and dispatching, customer service, work orders, timesheets, service agreements, inventory and equipment tracking, pre-invoicing, and reporting. The software is intuitive, giving organizations graphical picture views of the scheduling board, work order lists, field service worker and site locations, and more. Real-time drag-and-drop scheduling and re-scheduling take just a few mouse clicks, and pre-scheduling preventive maintenance calls are simple as well. FX Service Center makes completed work order and timesheet information instantly available for export to an organization's accounting, ERP, or CRM system. They can integrate FX Service Center with an organization's accounting, ERP or CRM system for seamless information flow. FX Resource Utilization is a strategic workforce modeling tool expected to accurately plan, track, and analyze service resources in real-time. It provides an automated way to size, manage, and report on resource capacity and utilization across the enterprise to provide suggestions to deploy resources, cost-effectively balance workloads and service engineers, and still make sure all service level commitments are met and contracts remain profitable. By adding FX Resource Utilization as part of the Service Center module, organizations have a new tool that is designed to increase the productivity and efficiency of their work force and service operations through load balancing and optimized resource planning.

FX Mobile

FX Mobile is a workflow software product that uses wireless communications technology with smartphones, laptops, and tablets to automate field service processes and should help field service personnel do their jobs better and faster. FX Mobile leverages the latest HTML5 technology, optimized for the latest devices such as Android, iPhone and iPad, to deliver a sleek and innovative user interface while still providing the ability for mobile workers to continue working whether they are in or out of wireless coverage. With FieldCentrix's technology, field service workers are able to complete their work, uninterrupted, regardless of wireless coverage. Along with FX Service Center, FX Mobile eliminates the manual inefficiencies and paperwork that can overwhelm service technicians and an organization's business. With FX Mobile, service technicians receive work orders electronically on their mobile devices. It then guides them, screen by screen, through the job – prompting them to perform standard tasks, take notes, and even record future recommended repairs or activities. With FX Mobile, field service personnel can now spend their time in the field, better serving customers, generating new business, and increasing organizations' bottom lines. FX Mobile is an international offering that supports various languages, as well as currencies, measurement systems and time zones.

FX e-Service

FX e-Service is an extension of the FieldCentrix solution that provides a dynamic customer self-service portal that links directly from a customer's web site. When integrated with FX Mobile software, it provides the unique capability to truly deliver real-time information from the point of service to your customers. Working seamlessly with FX Service Center call center and dispatching software, FX e-Service gives an organization's customers the flexibility of submitting service requests, accessing work order information, and managing their account over the Internet. Customers can receive an e-mail notification each time the status of a work order changes. This allows them to know instantly when the request has been received, scheduled, is in progress and when it is complete – all without ever calling into the office, waiting on hold or taking up valuable CSR resource.

FX Fleet Manager

FX Fleet Manager is FieldCentrix's Global Positioning System offering to help customers manage their mobile resources more effectively. FX Fleet Manager gives companies control and management of their field operations with the expectation that they will make decisions that will increase profitability, reduce service costs, enhance customer responsiveness and satisfaction, and improve productivity and efficiency. With FX Fleet Manager, dispatchers and office personnel will always know where mobile resources are located — in real-time. Are they where they should be? Are they lost? Are they safe? There's an emergency service request — which resource is the closest with the right parts and skill sets? All this information and more should contribute to more efficiently managed mobile resources.

FX Interchange

FX Interchange software provides data transporting services that allow enterprises to quickly and easily integrate FieldCentrix Enterprise to existing legacy and business systems – that are expected to maximize value from field data. FX Interchange converts data stored in FX Service Center knowledge base to XML or a Microsoft SQL Server database. Once converted, the data is accessible to other systems for basic billing and payroll extraction, and bi-directional integration purposes that should support the needs of an accounting, call center, or service dispatch integrated solution.

FX Interchange for JD Edwards®

FieldCentrix field service automation software and JD Edwards® Enterprise and EnterpriseOne applications are integrated to provide medium to large companies with an easy-to-use, cost-effective way to streamline and automate field service operations. The systems are integrated through FX Interchange™ for JD Edwards. This interface dynamically transfers key customer, work order, and accounting related information between the FieldCentrix and JD Edwards applications. This means the key functions that organizations need to run their business efficiently and cost-effectively are now seamless and completed electronically — without paper.

With the FieldCentrix and JD Edwards solution, service workers in the field access and enter all work order information using a mobile device at the job site. When the work is done, the service worker closes the work order and the completed information is sent wirelessly back to the office automatically. The electronic information is instantly accessible for processing by an organization's billing system so there's no data entry needed. Because you also no longer have to wait for the field service worker to bring in the paperwork before you can close the work order, customers can be billed quicker.

FX Mobility Express™

For customers who want to mobilize their workforce without deploying a full field service automation solution, FieldCentrix offers a special mobilized application development toolkit called FX Mobility Express™. The FX Mobility Express toolkit is bundled with FieldCentrix's popular mobile middleware and allows organizations to quickly and easily build custom mobile applications that fully leverage FieldCentrix's robust and scalable mobile infrastructure and user-friendly interface. Mobilizing applications with FX Mobility Express should provide organizations with a cost-effective way to create a solution that fits their unique business requirements on a platform built from years of mobile and wireless technology experience and used by thousands of users worldwide.

Astea Client Services

Professional Services

Astea's typical professional services engagement includes planning, prototyping and implementing Astea's products within the client's organization, and follow-up engagements designed to increase the efficiency of a service operation, increase the revenue it generates, or influence the customer experience. Some customers may require customization during the initial implementation or as a follow-on activity to create a more nuanced workflow or customer experience.

During the initial planning phase of the engagement, Astea's professional services personnel work closely with representatives of the customer to prepare a detailed project plan that includes a timetable, resource requirements, milestones, in-house training programs, onsite business process training and demonstrations of Astea's product capabilities within the customer's organization.

The next phase of the Astea professional services engagement is the prototyping phase, in which Astea works closely with representatives of the customer to configure Astea's software solutions to the customer's specific business process requirements.

The professional services team then performs the implementation phase, in which Astea's professional services personnel work with the client to develop detailed data mapping, conversions, interfaces and other technical and business processes necessary to integrate Astea's solutions into the customer's computing environment. Ultimately, education plans are developed and executed to provide the customer with the process and system knowledge necessary to effectively utilize the software and fully implement the solution.

The last phase of the engagement utilizes Astea's professional services personnel to assist in Go Live planning and the Go Live effort. Astea will assist in the planning for installation, initialization, data preparation, operational procedures, schedules and required resources. The initialization and creation of the production database is planned and prepared for the data history, open orders and all required data for go live processing. During the cutover to the solution, Astea business resources are best utilized to assist new users with functionality/processes while Astea technical resources support the customer's IT staff.

Following go live, Astea's professional services team engages the customer in the Assessment Phase. During this effort, the delivered system is assessed to validate benefits, analyze processes to measure key performance indicators, document and understand lessons learned. To perform these assessments, Astea consultants collect and analyze the planned benefits, processes used to capture and report on the key performance indicators, and document the lessons learned from all phases of the implementation. An action plan is then developed from the lessons learned and key performance indicators for use in future phases and/or releases.

During all phases, professional services are generally charged on an hourly or daily basis.

Technical Services

Astea's technical services teams provide services related to installation, data verification, functional design, technical design, system infrastructure setup or changes, customizations, Quality Assurance (QA) activities, testing and go live support. Initially, software and database installation resources are available to prepare the environment for the prototyping phase.

Data verification and feedback services can be provided for initial data verification analysis. These efforts are conducted to determine the present state of information as far as type, conversions, data manipulation, location, frequency, method of interface (initial load, ongoing load, data export or data import) and data integrity. Findings are documented and shared with the project team.

During the implementation phase, Astea's technical services team is often engaged to assist with the functional and/or technical design as related to customer desired system personalization, minor customization and interfaces, often referred to as "gaps". Gap solutions are assessed and categorized into system, studio, customization or interface. Utilizing the services of the customer project team, Astea professional services and Astea technical services create Business Requirement Documents ("BRDs") for all customizations and interfaces. Astea technical services will provide specifications and a quote for the customization. The customer and Astea agree on the outcome of the customization and all expected outputs prior to the actual development customization. Following acceptance of the BRDs, code will be written as per design. QA of the code with test data sets will complete these efforts.

Astea's technical services team will also provide testing and go live support, as required.

Customer Support

Astea's customer support organization provides customers with telephone and online technical support, as well as product enhancements, updates and new software releases. The Company can provide 24/7 "follow-the-sun" support through its global support network. Local representatives support all regions of Astea's worldwide operations. Astea personnel or a distributor's personnel familiar with local business customs and practices provide support in real-time and usually spoken in native languages. Typically, customer support fees are established as a fixed percentage of license fees and are invoiced to customers on an annual basis. Astea's customer support representatives are located in the United States, Europe, Israel, Japan and Australia. In addition, Astea provides customer support 24/7 with its self-service portal. The maintenance offering provides customers with support and help desk services, as well as software service packs and unspecified release upgrades for the modules they have purchased.

Education & Training

Application Training:

Key business owners responsible for the implementation of the core components will receive in-depth training designed to present the features, functionality and terminology of Astea's solutions. The objective of this training is to provide the audience with a working knowledge of these solutions. This exposure to the system will enable project communication and add insight into specific business processes.

End-user training plans and documents are created during the implementation phase. These plans and documentation are utilized to conduct end-user training sessions prior to go live.

Technical Training:

Software and database installation/creation training is provided, as required and/or recommended.

System Administration training provides the customer's IT staff pre-requisite knowledge to manipulate and manage administrative tasks associated with the Astea solutions. Included within these tasks are: Security, Batch Applications, Escalation, Import, etc.

Many customers are interested in performing their own personalization and minor customization to the system. Training sessions are available to enhance customer understanding of available options for personalization and how to perform customizations.

Customers

The Company estimates that it has sold licenses to approximately 665 customers ranging from small, rapidly growing companies to large, multinational corporations with geographically dispersed operations and remote offices. The broad applicability of the Company's products is demonstrated by the wide range of companies across many markets and industries that use one or more of Astea's products, including customers in information technology, medical devices and diagnostic systems, industrial controls and instrumentation, retail/point-of-sale systems equipment, HVAC, office automation equipment, imaging systems, fire and security, gaming/leisure equipment, facilities management, telecommunications and other related industries with equipment sales and service. In 2017, there were no customers that accounted for 10% or more of total revenues, and in 2016, there was one customer that accounted for 13% of total revenues.

Sales and Marketing

The Company markets its products through a worldwide network of direct and indirect sales and services offices with corporate headquarters in the United States and regional headquarters in the United Kingdom (Europe, Middle East and Africa Operations), Japan and Australia (Asia Pacific Operations). Sales partners include distributors (value-added resellers, system integrators and sales agents) and OEM partners. The Company actively seeks to expand its reseller network and establish an international indirect distribution channel targeted at the mid-market tier. See "Risk Factors — Need to Expand Indirect Sales."

Astea's direct sales force employs a consultative approach to selling, working closely with prospective clients to understand and define their needs and determine how such needs can be addressed by the Company's products. These clients typically represent the mid- to high-end of the market. A prospect development organization comprised of telemarketing representatives, who are engaged in outbound telemarketing and inbound inquiry response to a variety of marketing vehicles, develops and qualifies sales leads prior to referral to the direct sales staff. Additional prospects are identified and qualified through the networking of direct sales staff and the Company's management as part of daily business activities.

The modular structure of Astea's software and its ongoing product development efforts provide opportunities for incremental sales of product modules and consulting services to existing accounts. See "Risk Factors — Continued Dependence on Large Contracts May Result in Lengthy Sales and Implementation Cycles and Impact Revenue Recognition and Cash Flow."

Astea's corporate marketing department is responsible for product marketing, lead generation and marketing communications, including the Company's corporate website, dialogue with high tech industry analysts, trade conferences, advertising, digital marketing, online and traditional seminars, direct mail, product collateral, public relations and partner development. Based on feedback from customers, analysts, business partners and market data, the marketing department provides input and direction for the Company's ongoing product development efforts and opportunities for professional services. In 2017, the Company also hosted one its most successful annual conferences for users of Astea Alliance and FieldCentrix products. Conference participants attended training sessions, workshops and presentations, and interacted with other Astea product users, Astea management and staff, and technology partners, providing important input for future product direction.

In 2017, Astea made significant changes in both sales and marketing, improving personnel, process, approach and infrastructure. Last year the Company began enhancing its marketing strategies to improve how it communicates the unique value of its products, services and industry expertise. We have already seen positive responses from the market due to our reinvigorated sales and marketing culture.

Astea's international sales accounted for 47% of the Company's revenues in 2017 and 36% of the Company's revenues in 2016. See "Risk Factors — Expansion of International Sales."

Product Development

Astea's product development strategy is to provide products that perform with exceptional depth and breadth of functionality and are easy to implement, use and maintain. Products are designed to be flexible, modular and scalable, so that they can be implemented incrementally in phases and expanded to satisfy the evolving information requirements of Astea's clients and their customers.

The Company uses widely accepted commercially available application development tools from Microsoft Corporation. These software tools provide the Company's customers with the flexibility to deploy Astea's products across a variety of hardware platforms, operating systems and relational database management systems. The latest Astea Alliance solution suite is engineered for existing and emerging Microsoft technologies such as Microsoft.NET Framework, Visual Studio 2012, Windows Presentation Framework, Internet Information Server, and supports Windows 7, Windows 8, Windows 10, Windows Server 2012 & 2012 R2, MS SQL 2012 & 2012 R2, MS SQL 2015, Oracle Databases 10 & 11, and BizTalk Server. Astea Alliance supports deployments in both on-premise and cloud environments by leveraging a multi-tenant architecture. This multi-tenant architecture supports running the application using one set of hardware/software, serving multiple client organizations (tenants). The computing resources and application code are generally shared between all the tenants on a server. Each tenant has its own set of data that remains logically isolated from data that belongs to all other tenants.

In addition to product development that is conducted at Company facilities in the United States and Israel, Astea may participate in contractual relationships with complementary technology companies to reduce time-to-market with new product capabilities in order to continually increase its value proposition to both existing and prospective customers.

The Company's expense for product development for both the years ended December 31, 2017 and 2016 was $1,303,000 and $1,099,000, respectively. These expenses amounted to 5% and 4% of total revenues for 2017 and 2016, respectively. The Company's capitalized software development costs were $2,633,000 and $2,939,000 in 2017 and 2016, respectively. Total software development costs decreased $102,000 to $3,936,000 in 2017 compared to $4,038,000 in 2016. The Company anticipates that it will continue to allocate substantial resources to its development effort for the upgrade of its suite of products. See "Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Risk Factors — Need for Development of New Products."

Manufacturing

The Company's software products are distributed electronically via a client-server file transfer protocol. Included with the software products are security keys (a software piracy protection) and documentation available electronically and in hard copy.

Competition

The service management software market is intensely competitive and subject to rapid change. To maintain or increase its position in the industry, the Company will need to continually enhance its current product offerings, introduce new products and features and maintain its professional services capabilities. The Company currently competes on the basis of the depth and breadth of its integrated product features and functions, including the adaptability and scalability of its products to specific customer environments; the ability to deploy complex systems locally, regionally, nationally and internationally; product quality; ease-of-use; reliability and performance; breadth of professional services; integration of Astea's offerings with other enterprise applications; price; implementation time; and the availability of Astea's products on popular operating systems, relational databases, cloud-based, Internet and communications platforms.

Competitors vary in size, scope and breadth of the products and services offered. The Company encounters competition generally from a number of sources, including other software companies, third-party professional services organizations that develop custom software, and information systems departments of potential customers developing proprietary, custom software. In the service management marketplace, the Company competes against publicly held companies and numerous smaller, privately held companies. Some of the Company's competitors include SAP AG ("SAP"), Oracle Corporation ("Oracle"), and a number of smaller privately held companies. See "Risk Factors — Competition in the CRM Software Market is Intense."

Licenses and Intellectual Property

Astea considers its software proprietary and licenses its products to its customers under written license agreements. The Company also employs an encryption system that restricts a user's access to source code to further protect the Company's intellectual property. Because the Company's products allow customers to use the software's built-in features to customize their applications without altering the framework source code, the framework source code for the Company's products is typically neither licensed nor provided to customers. The Company does, however, license source code from time to time and maintains certain third-party source code escrow arrangements. See "— Customers" and "Management's Discussion and Analysis of Financial Condition and Results of Operations."

The Company seeks to protect its products through a combination of copyright, trademark, trade secret and fair business practice laws. The Company also requires employees, consultants and third parties to sign nondisclosure agreements. Despite these precautions, it may be possible for unauthorized parties to copy certain portions of the Company's products or reverse engineer or obtain and use information that the Company regards as proprietary. The Company presently has no patents or patent applications pending. See "Risk Factors — Dependence on Proprietary Technology."

Because the software development industry is characterized by rapid technological change, Astea believes that factors such as the technological and creative skills of its personnel, new product developments, frequent product enhancements, and reliable product maintenance are more important to establishing and maintaining a technology leadership position than current legal protections.

Employees

As of December 31, 2017, the Company, including its subsidiaries, had a total of 171 full-time employees worldwide, 82 in the United States, 14 in the United Kingdom, 3 in the Netherlands, 46 in Israel, 11 in Australia and 13 in Japan. In addition, we have 3 part-time employees in Israel. The Company's future performance depends, in significant part, upon the continued service of its key technical and management personnel and its continuing ability to attract and retain highly qualified and motivated personnel in all areas of its operations. See "Risk Factors — Dependence on Key Personnel; Competition for Employees." None of the Company's employees is represented by a labor union. The Company has not experienced any work stoppages and considers its relationships with its employees to be good.

Corporate History

The Company was incorporated in Pennsylvania in 1979 under the name Applied System Technologies, Inc. In 1992, the Company changed its name to Astea International Inc. Until 1986, the Company operated principally as a software-consulting firm, providing professional software consulting services on a fee for service and on a project basis. In 1986, the Company introduced its DISPATCH-1 product. In November 1991, the Company's sole stockholder acquired the outstanding stock of The DATA Group Corporation ("Data Group"), a provider of field service software and related professional services for the mainframe-computing environment. Data Group was merged into the Company in January 1994. In February 1995, the Company and its sole stockholder acquired the outstanding stock of Astea Service & Distribution Systems BV ("Astea BV"), the Company's distributor of DISPATCH-1 and related services in Europe. In May 1995, the Company reincorporated in Delaware. In July 1995, the Company completed its initial public offering of Common Stock. In February 1996, the Company merged with Bendata, Inc. In June 1996, the Company acquired Abalon AB. In September 1998 (effective July 1, 1998), the Company sold Bendata, Inc. In December 1998, the Company sold Abalon AB. In December 1997, the Company introduced ServiceAlliance and in October 1999, SalesAlliance. Both products were subsequently re-engineered into components of the AllianceEnterprise suite that was introduced in 2001.

Through 2001 and into 2002, the Company rebuilt its product functionality for Web-based applications and in August 2003 introduced Astea Alliance Version 6. The Company released a new system architecture based on Microsoft.NET during the third quarter of 2004. On September 21, 2005, the Company acquired substantially all the assets and certain liabilities of FieldCentrix, Inc. In the first quarter of 2010, the Company delivered Astea Alliance Version 10.0. In 2011, Astea launched Alliance Mobile Universal to deliver enterprise functionality optimized for the latest devices such as Android, iPhone and iPad leveraging the latest HTML5 technology. In 2013, Astea Alliance 11.0 was released. With this release, Astea introduced an abundance of new features and enhancements that were developed based on three primary concepts; optimizing and streamlining processes, enabling proactive service insight and intelligence at every level, and significantly increasing ease of use and customizations without technical skills. Accelerated revenue growth, proactive intelligence, productivity and process optimization, enriched employee interaction experience, and increased customer satisfaction are just a few of the advantages organizations will be able to achieve with this release. Astea Alliance is available either as an on-premise or cloud application, allowing every company to choose the right offering that aligns with their strategy and IT ecosystem.

In 2014, Astea introduced Astea Alliance Version 11.5. This release introduced many new innovations such as third party vendor mobile app, advanced customization capabilities, additional reporting and dashboard capabilities, as well as extending reports and visual indicators to the mobile device. With Astea's latest mobile release, organizations can create sales quotations, perform inventory cycle counts, support complex items with subcomponents, create and support different workflows/apps for different groups/types of work, and much more. Astea's mobile solution provides the level of flexibility necessary that makes it easy for organizations to modify and adapt the solution without needing development skillsets or adding additional costs.

In February 2015, Astea released Version 12.0, and subsequently released Version 12.5 in September 2015. Astea Alliance Version 12.0 included scheduling enhancements, additional visualization and collaboration tools, optimized navigation, as well as numerous customer-driven features from around the globe. Astea Alliance Version 12.0 delivered a number of noteworthy advancements that help companies accelerate response times, improve the overall customer experience, and gain instant access to actionable intelligence. Astea Alliance Version 12.5 included a fresh, new Customer Self-Service Portal, a new Service Manager Analytics App, and many additional features designed to optimize service outcomes. Additional enhancements were also developed in the areas of scheduling optimization, knowledge management, mobile field service, and logistics.

In October 2016, Astea released Version 14.0, and subsequently released Version 14.5 in September 2017, delivering an extensive number of both technical and functional advancements to help companies catapult revenue growth, optimize the employee/customer/partner interaction experience, drive productivity improvements, and boost customer satisfaction levels. This latest release represents a major step in unifying and connecting all service stakeholders—both within and outside of an organization—into one cohesive service ecosystem focused on delivering superior service outcomes for a company and its customers. Designed to share information and data effortlessly through more physical and digital mediums that ever before possible, Astea Alliance 14.5 provides extensive connectivity designed to strengthen the relationship between a service provider and its customer: portals that provide a 360 degree view of the relationship; the ability to leverage contingent worker job markets; seamless scheduling of employee, third party and contingent workers within one environment; and a best-in-class mobile experience for technicians, subcontractors and customers.

Item 1A. Risk Factors.

The following discussion of the Company's risk factors should be read in conjunction with the financial statements and related notes thereto set forth elsewhere in this report. The following factors, among others, could cause actual results to differ materially from those set forth in forward looking statements contained or incorporated by reference in this report and presented by management from time to time. Such factors, among others, may have a material adverse effect upon the Company's business, results of operations and financial condition.

History of Net Losses

The Company has a history of net losses. As of December 31, 2017, the Company had an accumulated deficit of approximately $35.3 million. Moreover, the Company expects to continue to incur additional operating expenses for research and development and investment in software development costs to achieve its projected revenue growth. There is no assurance that the Company may be able to achieve the necessary revenue growth or profitability in the future. If the Company does not attain or sustain profitability or raise additional equity or debt in the future, the Company may be unable to continue its operations.

Need for Development of New Products

The Company's future success will depend upon its ability to enhance its current products and develop and introduce new products on a timely basis that keep pace with technological developments, industry standards and the increasingly sophisticated needs of its customers, including developments within the client/server, thin-client and object-oriented computing environments. Such developments may require, from time to time, substantial capital investments by the Company in product development and testing. The Company intends to continue its commitment to research and development and its efforts to develop new products and product enhancements. There can be no assurance that the Company will not experience difficulties that could delay or prevent the successful development, introduction and marketing of new products and product enhancements; that new products and product enhancements will meet the requirements of the marketplace and achieve market acceptance; or that the Company's current or future products will conform to industry requirements. Furthermore, reallocation of resources by the Company, such as the diversion of research and development personnel to development of a particular feature for a potential or existing customer, can delay new products and certain product enhancements. Some of our customers adopted our software on an incremental basis. These customers may not expand usage of our software on an enterprise-wide basis or implement new software products introduced by the Company. The failure of the software to perform to customer expectations or otherwise to be deployed on an enterprise-wide basis could have a material adverse effect on the Company's ability to collect revenues or to increase revenues from new as well as existing customers. If the Company is unable to develop and market new products or enhancements of existing products successfully, the Company's ability to remain competitive in the industry will be materially adversely affected.

Rapid Technological Change

In any software industry there is a continual emergence of new technologies and continual change in customer requirements. Given the changing demands of service customers and the changing service models brought about my emerging technology, this is perhaps more true for field service and mobility technology at this time than any other software category. Because of this rapid change, the Company's current market position could be rapidly eroded without proper product advancements. In order to remain competitive, the Company must continuously introduce new products or product enhancements that meet customers' requirements, and allow our customers to effectively compete with other service providers, in a timely manner. If the Company is unable to do this, it may lose current and prospective customers to competitors.

The Company's application environment relies primarily on software development tools from Microsoft Corporation. If alternative software development tools were to be designed and generally accepted by the marketplace, we could be at a competitive disadvantage relative to companies employing such alternative developmental tools.

The Company's future success will depend mainly on its ability to increase licensed users of Astea Alliance, primarily in cloud environments. This will be achieved through effective marketing and sales execution supported by properly developed new products and product enhancements that allow our customers to continuously evolve and adapt. This is turn will generate additional professional service revenue as these customers look to us for guidance, along with the corresponding support and maintenance revenues. Like any company, Astea must control its operating expenses to improve profitability. Any failure of the Company's products to achieve or sustain market acceptance due to rapid technological changes, would have a material adverse effect on the Company's business and results of operations. There can be no assurance that the Company will be able to increase demand for Astea Alliance products, maintain an acceptable level of support and maintenance revenues or to lower its expenses, thereby avoiding future losses.

Burdens of Customization

The Company's clients may request significant customization of Astea Alliance products to address unique characteristics of their businesses or computing environments. In these situations, the Company would apply contract accounting to determine the recognition of license revenues. The Company's commitment to the customization could place a burden on its client support resources or delay the delivery or installation of products, which, in turn, could materially adversely affect its relationship with significant clients or otherwise adversely affect business and results of operations. In addition, the Company could incur penalties or reductions in revenues for failures to develop or timely deliver new products or product enhancements under development agreements and other arrangements with customers. If customers are not able to customize or deploy the Company's products successfully, the customer may not complete expected product deployment, which would prevent recognition of revenues and collection of amounts due, and could result in claims against the Company.

Product Defects; Failure to Meet Performance Criteria

The Company's software is intended for use in enterprise-wide applications that may be critical to its customers' business. As a result, customers and potential customers typically demand strict requirements for installation and deployment. The Company's software products are complex and may contain undetected errors or failures, particularly when software must be customized for a particular customer, when first introduced or when new versions are released. Although the Company conducts extensive product testing during product development, the Company has at times delayed commercial release of software until problems were corrected and, in some cases, has provided enhancements to correct errors in released software. The Company could, in the future, lose revenues or incur additional and unexpected costs as a result of software errors or defects. Despite testing by the Company and by current and potential customers, errors in the software, customizations or releases might not be detected until after initiating commercial shipments, which could result in additional costs, delays, possible damage to the Company's reputation and could cause diminished demand for the Company's products. This could lead to customer dissatisfaction and reduce the opportunity to renew maintenance contracts or sell new licenses.

Our Sales Cycles Can be Long, Unpredictable and Require Considerable Time and Expense, Which May Cause our Operating Results to Fluctuate

The timing of our closing sales to customers is difficult to predict. These efforts require us to educate our customers about the use and benefit of our services, including the technical capabilities and potential cost savings to an organization. customers typically undertake a significant evaluation process that has in the past resulted in a lengthy sales cycle, typically between four and twelve months. We spend substantial time, effort and money on our sales efforts without any assurance that our efforts will produce any sales. In addition, service subscriptions are frequently subject to budget constraints and unplanned administrative, processing and other delays. If sales expected from a specific customer for a particular quarter are not realized in that quarter or at all, our results could fall short of public expectations, and our business operating results and financial condition could be adversely affected from quarter to quarter.

Continued Dependence on Large Contracts May Result in Lengthy Sales and Implementation Cycles and Impact Revenue Recognition and Cash Flow

The sale and implementation of the Company's products generally involve a significant commitment of resources by prospective customers. As a result, the Company's sales process is often subject to delays associated with lengthy approval processes attendant to significant capital expenditures, definition of special customer implementation requirements, and extensive contract negotiations with the customer. Therefore, the sales cycle varies substantially from customer to customer and typically lasts between four and twelve months. During this time the Company may devote significant time and resources to a prospective customer, including costs associated with multiple site visits, product demonstrations and feasibility studies. The Company may experience a number of significant delays over which the Company has no control. Because the costs associated with the sale of the product are fixed in current periods, there may be a lag between the time the Company incurs costs with regard to a particular customer or contract and the time the Company begins to receive or recognize revenues from such customer or contract. Moreover, in the event of any downturn in any existing or potential customer's business or the economy in general, purchases of the Company's products may be deferred or canceled.

In addition, the implementation of the Company's products typically takes several months of integration of the product with the customer's other existing systems and customer training requires a close working relationship between the customer and members of the Company's professional service organization. These issues make it difficult to predict the quarter in which expected orders will occur. Delays in implementation of products could cause some or all of the professional services revenues from those projects to be shifted from the expected quarter to a subsequent quarter or quarters.

When the Company has provided consulting services to implement certain larger projects, some customers have delayed payment of a portion of license fees until implementation was complete and in some cases have disputed the consulting fees charged for implementation. There can be no assurance the Company will not experience additional delays or disputes regarding payment in the future, particularly if the Company receives orders for large, complex installations. Additionally, as a result of the application of the revenue recognition rules applicable to the Company's licenses under generally accepted accounting principles, license revenues may be recognized in periods after those in which the respective licenses were signed. The Company believes that period-to-period comparisons of its results of operations should not be relied upon as any indication of future performance.

We Cannot Accurately Predict Subscription Renewals Rates and the Impact These Rates May Have on Our Future Revenue and Operating Results

Our customers have no obligation to renew their subscriptions for our cloud service after the expiration of their initial subscription period, which is typically 36 months. Some customers may elect not to renew. In addition, our customers may renew for fewer users or renew for shorter contract lengths. We cannot accurately predict attrition rates given our varied customer base and the number of multi-year subscription contracts. Our attrition rates may increase or fluctuate as a result of a number of factors, including customer dissatisfaction with our service, customers' spending levels, decreases in the number of users at our customers, pricing changes and deteriorating general economic conditions. If our customers do not renew their subscriptions for our subscription services or reduce the number of paying subscriptions at the time of renewal, our revenue will decline and our business may suffer.

Our future success also depends in part on our ability to sell new and additional services and/or more subscription service to new and existing customers. The rate at which our customers purchase new licenses or upgraded services depends on a number of factors, including general economic conditions and that our customers do not react negatively to any price changes related to these services. If our efforts to sell to new and existing customers are not successful, our business may suffer.

Fluctuations in Quarterly Operating Results May Be Significant

The Company's quarterly operating results have in the past and may in the future vary significantly depending on factors such as:

- revenue from software sales;
- timing of new product releases;
- market acceptance of new and enhanced versions of the Company's products;
- customer order deferrals in anticipation of enhancements or new products;
- size and timing of significant orders, the recognition of revenue from such orders;
- changes in pricing policies by the Company and its competitors;
- introduction of alternative technologies;
- changes in operating expenses;
- changes in the Company's strategy;
- personnel changes; and
- effect of potential acquisitions by the Company and its competitors.

The Company has limited or no control over many of these factors. Due to all these factors, it is possible that in some future quarter the Company's operating results will be materially adversely affected.

Fluctuations in Quarterly Operating Results Due to Seasonal Factors

The Company expects to experience fluctuations in the sale of licenses for its products due to seasonal factors. The Company has experienced and anticipates that it may experience relatively lower sales in the first fiscal quarter due to patterns in capital budgeting and purchasing cycles of current and prospective customers. The Company also expects that sales may decline during the summer months of its third quarter, particularly in the European markets. Moreover, the Company generally records most of its total quarterly license revenues in the third month of the quarter, with a concentration of these revenues in the last half of that third month. This concentration of license revenues is influenced by customer tendencies to make significant capital expenditures at the end of a fiscal quarter. The Company expects these revenue patterns to continue for the foreseeable future. Thus, its results of operations may vary seasonally in accordance with licensing activity, and will also depend upon recognition of revenue from such licenses from time to time. The Company believes that period-to-period comparisons of its results of operations are not necessarily meaningful and should not be relied upon as an indication of future performance.

Competition in the CRM Software Market is Intense

The Company competes in the CRM software market. This market is highly competitive and the Company expects competition in the market to increase. The Company's competitors include large public companies such as Oracle, which owns PeopleSoft, Siebel, and SalesForce.com, as well as traditional ERP software providers such as SAP that are developing CRM capabilities. In addition, a number of smaller privately held companies generally focus only on discrete areas of the CRM software marketplace. Because the barriers to entry in the CRM software market are relatively low, new competitors may emerge with products that are superior to the Company's products or that achieve greater market acceptance. Moreover, the CRM industry is currently experiencing significant consolidation, as larger public companies seek to enter the CRM market through acquisitions or establish other cooperative relationships among themselves, thereby enhancing their ability to compete in this market with their combined resources. Some of the Company's existing and potential competitors have greater financial, technical, marketing and distribution resources than the Company. These and other competitors pose business risks to the Company because:

- they compete for the same customers that the Company tries to attract;
- if the Company loses customers to its competitors, it may be difficult or impossible to win them back;
-

lower prices and a smaller market share could limit the Company's revenue generating ability, reduce its gross margins and restrict its ability to become profitable or sustain profitability; and

- competitors may be able to devote greater resources to more quickly respond to emerging technologies and changes in customer requirements or to the development, promotion and sales of their products.

There can be no assurance that the Company will be able to compete successfully against current and future competitors or that competitive pressures faced by the Company will not adversely affect its business and results of operations.

Part of our Business is Dependent on Market Demand for, and Acceptance of, the Cloud-based Model for the Use of Software

We derive, and expect to continue to derive a growing percentage of our revenue from the sale of cloud-based services. As a result, widespread acceptance and use of the cloud-based business model is critical to our future growth and success. Under the perpetual or periodic license model for software procurement, users of the software typically run applications on their hardware. Because companies are generally predisposed to maintaining control of their IT systems and infrastructure, there may be resistance to the concept of accessing the functionality that software provides as a service through a third party. If the market for cloud-based, software solutions ceases to grow or grows more slowly than we currently anticipate, demand for our services could be negatively affected.

Dependence on Proprietary Technology

The Company depends heavily on proprietary technology for its business to succeed. The Company licenses its products to customers under license agreements containing, among other terms, provisions protecting against the unauthorized use, copying and transfer of the licensed program. In addition, the Company relies on a combination of trade secrets, copyright and trademark laws and confidentiality procedures to protect the Company's proprietary rights in its products and technology. The legal protection is limited, however. Unauthorized parties could copy aspects of the Company's products and obtain and use information that the Company believes is proprietary. Other parties may breach confidentiality agreements or other contracts they have made with the Company. Policing unauthorized use of the Company's software is difficult and, while the Company is unable to determine the extent to which piracy of its software products exists, software piracy can be expected to be a persistent problem. There can be no assurance that any of the measures taken by the Company will be adequate to protect its proprietary technology or that its competitors will not independently develop technologies that are substantially equivalent or superior to the Company's technologies. If the Company fails to successfully enforce its proprietary technology, its competitive position may be harmed.

Other software providers could develop similar technology independently, which may infringe on the Company's proprietary rights. The Company may not be able to detect infringement and may lose a competitive position in the market before it does so. In addition, competitors may design around the Company's technology or develop competing technologies. The laws of some foreign countries do not protect the Company's proprietary rights to the same extent as do the laws of the United States. Litigation may be necessary to enforce the Company's proprietary rights. Such litigation is time-consuming, has an uncertain outcome and could result in substantial costs and diversion of management's attention and resources. However, if the Company fails to successfully enforce its proprietary rights, the Company's competitive position may be harmed.

Limited Number of Data Centers to Deliver our Cloud Services

We host our cloud-based software using several third-party data center facilities. We do not control the operation of these facilities. The owners of our data center facilities have no obligation to renew their agreements with us on commercially reasonable terms, or at all. If we are unable to renew these agreements on commercially reasonable terms, we may be required to transfer our hosting operations to other data center facilities, and we may incur significant costs and possible service interruption in connection with a transfer of this type.

Any changes in third-party service levels at our data centers or any errors, defects, disruptions or other performance problems with our services could harm our reputation and may damage our customers' businesses. Interruptions in our services might reduce our revenue, cause us to issue credits to customers, subject us to potential liability, cause customers to terminate their subscriptions or harm our renewal rates.
Our data centers are vulnerable to damage or interruption from human error, intentional bad acts, pandemics, earthquakes, hurricanes, floods, fires, war, terrorist attacks, power losses, hardware failures, systems failures, telecommunications failures and similar events. The occurrence of a natural disaster or an act of terrorism, or

vandalism or other misconduct, a decision to close the facilities without adequate notice or other unanticipated problems could result in lengthy interruptions in our services.

Our Success Depends on Our Customers' Continued High-Speed Access to the Internet

Because our cloud services are designed to work over the Internet, our revenue growth depends on our customers' high-speed access to the Internet, as well as the continued maintenance and development of the Internet infrastructure. The future delivery of our cloud services will depend on third-party Internet service providers to expand high-speed Internet access, to maintain a reliable network with the necessary speed, data capacity and security, and to develop complementary products and services, including high-speed modems, for providing reliable and timely Internet access and services. The success of our business directly depends on the continued accessibility, maintenance and improvement of the Internet as a convenient means of customer interaction, as well as an efficient medium for the delivery and distribution of information by businesses to their employees. All of these factors are out of our control.

To the extent that the Internet continues to experience increased numbers of users, frequency of use or bandwidth requirements, the Internet may become congested and be unable to support the demands placed on it, and its performance or reliability may decline. Any future Internet outages or delays could adversely affect our ability to provide cloud services to our customers.

Possible Infringement of Third Party Intellectual Property Rights

Substantial litigation and threats of litigation regarding intellectual property rights are common in this industry. The Company is not aware that its products and technologies employ technology that infringes any valid, existing proprietary rights of third parties. While there currently are no pending lawsuits against the Company regarding infringement of any existing patents or other intellectual property rights or any notices that it is infringing the intellectual property rights of others, third parties may assert such claims in the future. Any claims, with or without merit, could:

- be time consuming to defend;
- result in costly litigation or damage awards;
- divert management's attention and resources;
- cause product shipment delays; or
- require the Company to seek to enter into royalty or licensing agreements, which may not be available on terms acceptable to the Company, if at all.

A successful claim of intellectual property infringement against the Company or the Company's failure or inability to license the infringed or similar technology could seriously harm its business because the Company would not be able to sell the impacted product without exposing itself to litigation risk and damages. Furthermore, redevelopment of the product so as to avoid infringement could cause the Company to incur significant additional expense and delay.

Security Breaches and Other Disruptions Could Compromise our Information and Expose us to Liability, Which Would Cause our Business and Reputation to Suffer

In the ordinary course of the Company's business, it collects and stores sensitive data, including intellectual property and proprietary business information of the Company and the Company's customers, suppliers and business partners as well as personally identifiable information of the Company's customers and employees. The secure processing, maintenance and transmission of this information is critical to the Company's operations and business strategy. Despite the Company's security measures, its information technology and infrastructure may be vulnerable to attacks by hackers or breached due to employee error, malfeasance or other disruptions. Any such breach could compromise the Company's networks and the information stored there could be accessed, publicly disclosed, lost or stolen. Any such access, disclosure or other loss of information could result in legal claims or proceedings, liability under laws that protect the privacy of personal information, and regulatory penalties, disrupt the Company's operations and the services the Company provides to customers, damage the Company's reputation, and cause a loss of confidence in the Company's products and services, which could adversely affect the Company's business/operating margins, revenues and competitive position.

Need to Expand Indirect Sales

The Company has historically sold its products through its direct sales force and a limited number of distributors (value-added resellers, system integrators and sales agents). The Company's ability to achieve significant revenue growth in the future will depend in large part on its success in establishing relationships with distributors and OEM partners. The Company is currently investing, and plans to continue to invest, significant resources to expand its domestic and international direct sales force and develop distribution relationships. The Company's distributors also sell or can potentially sell products offered by the Company's competitors. There can be no assurance that the Company will be able to retain or attract a sufficient number of its existing or future third party distribution partners or that such partners will recommend, or continue to recommend, the Company's products. The inability to establish or maintain successful relationships with distributors and OEM partners or to train its direct sales force could cause its sales to decline.

Future Acquisitions

As part of Astea's growth strategy, it may pursue the acquisition of businesses, technologies or products that are complementary to its business. Acquisitions involve a number of special risks that could harm the Company's business, including the diversion of management's attention, the integration of the operations and personnel of the acquired companies, and the potential loss of key employees. In particular, the failure to maintain adequate operating and financial control systems or unexpected difficulties encountered during expansion could harm the Company's business. Acquisitions may result in potentially dilutive issuances of equity securities, and the incurrence of debt and contingent liabilities, any of which could materially adversely affect the Company's business and results of operations.

Under the covenants with Western Alliance Bank ("WAB") regarding our line of credit, the Company must first receive WAB's approval before entering into any acquisition transactions.

Expansion of International Sales

Astea's international sales accounted for 47% of the Company's revenues in 2017 and 36% in 2016. The Company expects that international sales will continue to be a significant component of its business. In the Company's efforts to expand its international presence, it will face certain risks, which it may not be successful in addressing. These risks include:

- difficulties in establishing and managing international distribution channels and in translating products into foreign languages;
- difficulties finding staff to manage foreign operations and collect accounts receivable;
- difficulties enforcing intellectual property rights;
- liabilities and financial exposure under foreign laws and regulatory requirements;
- potential political, economic or military instability in the countries in which the Company operates;
- fluctuations in the value of foreign currencies and currency exchange rates; and
- potentially adverse tax consequences.

Additionally, the current economic difficulties in several European and Asian countries could have an adverse impact on the Company's international operations in future periods. Any of these factors, if not successfully addressed, could harm the Company's operating results.

Subjection to Anti-Bribery and Anti-Corruption Laws

We are required to comply with anti-bribery and anti-corruption laws in the jurisdictions in which we operate, including the U.S. Foreign Corrupt Practices Act (the "FCPA"). The FCPA generally prohibits covered entities and their intermediaries from engaging in bribery or making other prohibited payments to foreign officials for the purpose of obtaining or keeping business or other benefits. In addition, the FCPA imposes accounting standards and requirements on covered entities which are intended to prevent the diversion of corporate funds to the payment of bribes and other improper payments, and to prevent the establishment of "off-books" slush funds from which such improper payments can be made. Although we believe that we have acted in compliance with applicable anti-corruption laws, there is no assurance that our practices have prevented or will work to prevent anti-corruption violations or that they will protect us against liability under anti-corruption laws for actions taken by our integrators, distributors, agents and other intermediaries with respect to our business or any businesses that we may acquire.

Compliance with the FCPA and other applicable anti-corruption laws is expensive and difficult, particularly in countries in which corruption is a recognized problem. If we or our intermediaries acting on our behalf are found to have failed to comply with the FCPA or other applicable anti-corruption laws, we may be subject to criminal and civil penalties, disgorgement and other remedial measures, any of which could have an adverse impact on our business, results of operations and financial condition. Any investigation of any potential violations of anti-corruption laws also could have an adverse impact on our business, results of operations and financial condition, such as through legal expenses and reputational effects.

Research and Development in Israel; Potential Political, Economic or Military Instability

Astea's principal research and development facilities are located in Israel. Accordingly, political, economic and military conditions in Israel may directly affect its business. Continued political and economic instability or armed conflicts in Israel or in the region could directly harm the Company's business and operations.

Since the establishment of the State of Israel in 1948, a number of armed conflicts have taken place between Israel and its Arab neighbors, and a state of hostility has existed in varying degrees and intensity. This state of hostility has led to security and economic problems for Israel. The future of peace efforts between Israel and its Arab neighbors, particularly in light of the recent violence and political unrest in the Middle East, remains uncertain and several countries still restrict business with Israel and Israeli companies. These restrictive laws and policies may also materially harm the Company's operating results and financial condition. Any hostilities involving Israel or the interruption or curtailment of trade between Israel and its trading partners could adversely affect our operations and results of operations. The political and security situation in Israel may also result in parties with whom we have agreements involving performance in Israel claiming that they are not obligated to perform their commitments under those agreements pursuant to force majeure provisions in such agreements.

Dependence on Key Personnel Who Are Required to Perform Military Service

Many of the Company's employees in Israel are obligated to perform annual military reserve duty in the Israeli army and are subject to being called to active duty at any time, which could adversely affect the Company's ability to pursue its planned research and development efforts. The Company cannot assess the full impact of these requirements on its workforce or business and the Company cannot predict the effect of any expansion or reduction of these obligations. The Company's operations could be disrupted by the absence for a significant period of time of one or more of our key employees or a significant number of other employees due to military service. Any such disruption in the Company's business could harm its operations.

Inflation and Currency Fluctuations

The Company generates most of its revenues in U.S. dollars but all of its costs associated with the foreign operations located in Europe, the Pacific Rim, Japan, and Israel are denominated in the respective local currency and translated into U.S. dollars for consolidation and reporting. As a result, the Company is exposed to risks to the extent that the rate of inflation in Europe, the Pacific Rim, Japan, or Israel exceeds the rate of devaluation of their related foreign currency in relation to the U.S. dollar or if the timing of such devaluations lags behind inflation in Europe, the Pacific Rim, Japan, or Israel. In that event, the cost of the Company's operations in Europe, the Pacific Rim, Japan, and Israel measured in terms of U.S. dollars will increase and the U.S. dollar-measured results of operations will suffer.

Dependence on Key Personnel; Competition for Employees

The continued growth and success largely depends on the managerial and technical skills of key technical, sales and management personnel. In particular, the Company's business and operations are substantially dependent on the performance of Zack Bergreen, the founder and chief executive officer. If Mr. Bergreen were to leave or become unable to perform services for the Company, the business would likely be harmed. The Company's success also depends, to a substantial degree, upon its continuing ability to attract, motivate and retain other talented and highly qualified personnel. Competition for key personnel is intense, particularly so in recent years. From time to time the Company has experienced difficulty in recruiting and retaining talented and qualified employees. There can be no assurance that the Company can retain its key technical, sales and managerial employees or that it can attract, assimilate or retain other highly qualified technical, sales and managerial personnel in the future. If the Company fails to attract or retain enough skilled personnel, its product development efforts may be delayed, the quality of its customer service may decline and sales may decline.

Concentration of Ownership

Currently, Zack Bergreen, the Company's chief executive officer, beneficially owns approximately 54.9% of the outstanding Common Stock of the Company, which includes 826,000 shares of Series A Convertible Preferred Stock and 797,000 shares of Series B Convertible Preferred Stock. As a result, Mr. Bergreen exercises significant control over the Company through his ability to influence and control the election of directors and all other matters that require action by the Company's stockholders. Under certain circumstances, Mr. Bergreen could prevent or delay a change of control of the Company which may be favored by a significant portion of the Company's other stockholders, or cause a change of control not favored by the majority of the Company's other stockholders. Mr. Bergreen's ability under certain circumstances to influence, cause or delay a change in control of the Company also may have an adverse effect on the market price of the Company's Common Stock.

Possible Volatility of Stock Price

The market price of the Company's common stock (the "Common Stock") has in the past been, and may continue to be, subject to significant fluctuations in response to, and may be adversely affected by, variations in quarterly operating results, changes in earnings estimates by analysts, developments in the software industry, and adverse earnings or other financial announcements of the Company's customers as well as other factors. In addition, the stock market can experience extreme price and volume fluctuations from time to time, which may bear no meaningful relationship to the Company's performance. Broad market fluctuations, as well as economic conditions generally and in the software industry specifically, may result in material adverse effects on the market price of the Company's Common Stock.

Under Our Loan Agreement with Western Alliance Bank (WAB), if We Fail to Meet Certain Financial and Liquidity Covenants, WAB May Increase Our Interest Rate, Lower Our Borrowing Base or Refuse to Grant Us Any Additional Borrowings in the Future

On August 11, 2017, the Company entered in to a Business Financing Agreement (the "Financing Agreement") with Bridge Bank, a division of WAB, which includes a revolving line of credit and term loan. The Financing agreement was modified in November 2017 to better align the financial and liquidity covenants with the Company. The agreement will mature in August 2019.

The Financing Agreement with Bridge Bank, established a revolving credit line for the Company in the principal amount of up to $2,400,000 (the "Revolving Credit Line") and a Term Loan of $400,000 (the "Term Loan"). Availability under the Revolving Credit Line is tied to a borrowing base formula that is based on 80% of the Company's eligible domestic accounts receivable. Advances under the Revolving Credit Line (the "Advances") may be repaid and reborrowed in accordance with the Loan Agreement. Pursuant to the Financing Agreement, the Company agreed to pay to Bridge Bank the outstanding principal amount of all Advances, the unpaid interest thereon, and all other obligations incurred with respect to the Loan Agreement in August 2019. Interest will be accrued and paid monthly at the Wall Street Journal Prime Rate plus 1.5%.

Subject to certain exceptions, the Financing Agreement contains covenants prohibiting the Company from, among other things: (a) conveying, selling, leasing, transferring or otherwise disposing of their properties or assets; (b) liquidating or dissolving; (c) engaging in any business other than the business currently engaged in or reasonably related thereto; (d) entering into any merger or consolidation, or acquiring all or substantially all of the capital stock or property of another entity; (e) becoming liable for any indebtedness; (f) allowing any lien or encumbrance on any of their property; and (g) paying any dividends (other than dividends on outstanding convertible preferred stock); and (i) making payment on subordinated debt. Further, the Company must maintain minimum liquidity of $750,000, tested monthly, consisting of a combination of unrestricted cash at Bridge Bank plus available U.S. accounts receivable. In addition, actual Earnings before Interest, Taxes, Depreciation and Amortization (EBITDA) for the trailing 6-month period must be at least $1, as tested quarterly.

There is no assurance that in the future that WAB will agree to grant a waiver or enter into a forbearance agreement with the Company if it fails to be in compliance with its covenants. Continued compliance with its covenants is dependent on the Company achieving certain operating results in 2018 and throughout the remaining term of the Loan Agreement. Market conditions have been difficult to predict and there is no assurance that in future periods the Company will meet the operating income targets in order to meet certain operating covenants as currently defined in the Loan Agreement.

Limitations of the Company Charter Documents

The Company's Certificate of Incorporation and By-Laws contain provisions that could discourage a proxy contest or make more difficult the acquisition of a substantial block of the Company's Common Stock, including provisions that allow the Board of Directors to take into account a number of non-economic factors, such as the social, legal and other effects upon employees, suppliers, customers and creditors, when evaluating offers for the Company's acquisition. Such provisions could limit the price that investors might be willing to pay in the future for the Company's shares of Common Stock. The Board of Directors is authorized to issue, without stockholder approval, up to 5,000,000 shares of preferred stock with voting, conversion and other rights and preferences that may be superior to the Company's Common Stock and that could adversely affect the voting power or other rights of our holders of Common Stock. There are currently 826,000 Series A and 797,000 Series B Convertible Preferred Stock shares outstanding. The issuance of preferred stock or of rights to purchase preferred stock could be used to discourage an unsolicited acquisition proposal.

Our business is subject to complex and evolving U.S. and foreign laws and regulations regarding privacy, data protection, competition, consumer protection, and other matters. Many of these laws and regulations are subject to change and uncertain interpretation, and could result in claims, changes to our business practices, monetary penalties, increased cost of operations, or otherwise harm our business.

We are subject to a variety of laws and regulations in the United States and abroad that involve matters central to our business, including privacy, data protection, and personal information, intellectual property, data security, data retention and deletion, personal information, electronic contracts and other communications, competition, consumer protection, taxation, economic or other trade prohibitions or sanctions, and securities law compliance. The introduction of our products, expansion of our activities in certain jurisdictions, or other actions that we may take may subject us to additional laws, regulations, or other government scrutiny. In addition, foreign data protection, privacy, competition, and other laws and regulations can impose different obligations or be more restrictive than those in the United States.

These U.S. federal and state and foreign laws and regulations, which in some cases can be enforced by private parties in addition to government entities, are constantly evolving and can be subject to significant change. As a result, the application, interpretation, and enforcement of these laws and regulations are often uncertain, particularly in the new and rapidly evolving industry in which we operate, and may be interpreted and applied inconsistently from country to country and inconsistently with our current policies and practices.

Proposed or new legislation and regulations could also significantly affect our business. There currently are a number of proposals pending before federal, state, and foreign legislative and regulatory bodies. In addition, the European Commission has approved a data protection regulation, known as the General Data Protection Regulation ("GDPR"), which has been finalized and is due to become effective in or around May 2018. The GDPR will include operational requirements for companies that receive or process personal data of residents of the European Union that are different than those currently in place in the European Union, and that will include significant penalties for non-compliance. Similarly, there are a number of legislative proposals in the United States, at both the federal and state level, that could impose new obligations in areas affecting our business, such as liability for copyright infringement by third parties. In addition, some countries are considering or have passed legislation implementing data protection requirements or requiring local storage and processing of data or similar requirements that could increase the cost and complexity of delivering our services.

These laws and regulations, as well as any associated inquiries or investigations or any other government actions, may be costly to comply with and may delay or impede the development of new products, increase our operating costs, require significant management time and attention, and subject us to remedies that may harm our business, including fines or demands or orders that we modify or cease existing business practices.

Item 1B. Unresolved Staff Comments.

None

Item 2. Properties.

The Company's headquarters are located in a leased facility of approximately 24,000 square feet in Horsham, Pennsylvania which runs through August 2022. The Company also leases facilities for operational activities in Irvine, California; Vianen, Netherlands; and Karmiel, Israel, and for sales and customer support activities in Maidenhead, England; Tokyo, Japan; and North Sydney, Australia. The Company believes that suitable additional or alternative office space will be available in the future on commercially reasonable terms as needed.

Item 3. Legal Proceedings.

None

Item 4. Mine Safety Disclosures.

Not applicable

PART II

Item 5. Market for Registrant's Common Equity and Related Stockholder Matters and Issuer Purchases of Equity Securities.

The Company's Common Stock was traded on OTCQB marketplace of the OTC Markets Group, Inc. ("OTCQB). The trading on the OTCQB began on February 19, 2015 under the symbol "ATEA."

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The following table sets forth the high and low sale prices for the Common Stock as reported by OTCQB in fiscal years 2017 and 2016:

2017	High	Low
First quarter	$2.35	$1.40
Second quarter	3.00	1.98
Third quarter	2.60	1.80
Fourth quarter	2.85	2.04

2016	High	Low
First quarter	$2.15	$1.40
Second quarter	2.36	1.71
Third quarter	2.38	1.35
Fourth quarter	2.00	1.45

As of March 27, 2018, there were approximately 53 holders of record of the Company's Common Stock. On March 27, 2018, the last reported sale price of the Common Stock as reported by OTCQB was $3.90 per share. The Company currently has outstanding 826,000 Series A Convertible Preferred Stock shares and 797,000 Series B Convertible Preferred Stock shares.

Dividend Policy

The Board of Directors from time to time reviews the Company's forecasted operations and financial condition to determine whether and when payment of a dividend or dividends on common stock is appropriate. No common stock dividends have been declared since June 2000. The Company has no intention at this time to pay dividends on its common stock. The Revolving Facility also restricts the Company's ability to pay dividends on the Common Stock. In September 2008, the Company issued 826,000 shares of Series A Convertible Preferred Stock and in June 2014 issued 797,000 shares of Series B Convertible Preferred Stock. Dividends accrue daily at a rate of 10% and are payable quarterly only when they are declared by the Board of Directors. The Company continues to either accrue or disburse quarterly payments on the preferred dividends.

Securities Authorized for Issuance Under Equity Compensation Plans

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants & Rights (a)	Weighted Average Exercise Price of Outstanding Options, Warrants & Rights (b)	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (excluding securities reflected in column (a)) (c)
Equity compensation plans approved by security holders	703,000	$2.39	560,000
Equity compensation plans not approved by security holders	-	-	-
Total	703,000	$2.39	560,000

Item 6. Selected Financial Data.

Not applicable

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Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations.

Overview

The Company develops, markets and supports service management software solutions, which are licensed to companies that sell and service equipment, or sell and deliver professional services. The Company's principal product offerings, Astea Alliance and FieldCentrix Enterprise suites, integrate and automate sales and service business processes and are designed to assist its users to increase competitive advantages, top-line revenue growth and profitability through better management of information, people, assets and cash flows.

The Company's products and services are primarily used in industries such as information technology, medical devices and diagnostic systems, industrial controls and instrumentation, retail systems, office automation, imaging systems, facilities management and telecommunications. An eclectic group of other industries, all with equipment sales and service requirements, are also represented in Astea's customer base. The Company maintains offices in the United States, United Kingdom, Australia, Israel, Japan and the Netherlands.

The Company generates revenues from three sources: software license fees for its software products, subscriptions services from its cloud services, and services and maintenance revenues from professional services, which includes consulting, implementation, training and maintenance related to those products.

Software license fees accounted for 10% of the Company's total revenues in 2017. Software license fee revenues include some fees from the sublicensing of third-party software and mapping software licenses. Typically, customers pay a license fee for the software based on the number of licensed users. Depending on the contract terms and conditions, software license fees are recognized as revenue upon delivery of the product if no significant vendor obligations remain and collection of the resulting receivable is deemed probable. If significant vendor obligations exist at the time of delivery or if the product is subject to uncertain customer acceptance, revenue is deferred until no significant obligations remain and/or acceptance has occurred.

We provide SaaS solutions which generate revenue from cloud subscription services. Our SaaS customers typically purchase three-year license subscriptions, but occasionally will purchase annual license subscriptions. We do not recognize any revenue from SaaS sales until the customer goes live. The revenues recognized from SaaS projects were attributable to projects that went live in 2017 or were already live before the start of 2017. A larger than expected amount of SaaS revenue was reported in 2016 due to the cancellation of a contract by a significant customer, allowing us to recognize $1,066,000 of subscription revenue. It generally takes several months of implementation and consulting for a new customer to go live. Subscription revenue is recognized on a straight-line basis over the service period.

The remaining component of the Company's revenues consists principally of fees derived from professional services associated with the implementation and deployment of the Company's software products, and maintenance fees for ongoing customer support, primarily external customer technical support services and unspecified product upgrades and enhancements. Professional services (including training) are generally charged on an hourly or daily basis and invoiced on a regular basis, generally monthly, pursuant to customer work orders. Training services may also be charged on a per-attendee basis with a minimum daily charge. Out-of-pocket expenses incurred by Company personnel performing professional services are typically reimbursed by the customer. The Company recognizes revenue from professional services as the services are performed unless the services are under a fixed-price arrangement or are pursuant to a subscription arrangement. Consulting, training and other services that are sold under fixed-price arrangements are recognized using the proportional performance method based on direct labor hours incurred to date as a percentage of total estimated direct labor hours required to complete the project. In a subscription arrangement, all professional services are deferred until the customer goes live. Once live, implementation services are recognized ratably over the remaining life of that contract. Consulting services primarily comprise implementation support related to the installation and configuration of the Company's products and do not typically require significant production, modification or customization of the software. In arrangements that require significant production, modification or customization of the software and where services are not available from third-party suppliers, the consulting and license fees are recognized concurrently. When total cost estimates exceed revenue in a fixed-price arrangement, the estimated losses are recognized immediately in cost of revenue.

Maintenance fees are typically paid to the Company under written agreements entered into at the time of the initial software license sale. Maintenance revenue, which is generally invoiced annually, is recognized ratably over the term of the agreement.

Critical Accounting Policies and Estimates

The Company's significant accounting policies are more fully described in its "Summary of Significant Accounting Policies," Note 2, to the Company's consolidated financial statements. The preparation of financial statements in conformity with accounting principles generally accepted within the United States of America requires management to make estimates and assumptions in certain circumstances that affect amounts reported in the accompanying financial statements and related notes. In preparing these financial statements, management has made its best estimates and judgments of certain amounts included in the financial statements, giving due consideration to materiality. The Company does not believe there is a great likelihood that materially different amounts would be reported related to the accounting policies described below; however, application of these accounting policies involves the exercise of judgments and the use of assumptions as to future uncertainties and, as a result, actual results could differ from these estimates.

Revenue Recognition

Astea's revenue is principally recognized from three sources: (i) licensing arrangements, (ii) subscription services and (iii) services and maintenance.

The Company markets its products primarily through its direct sales force and resellers. License agreements do not provide for a right of return, and historically, product returns have not been significant.

The Company recognizes revenue from license sales when all of the following criteria are met: persuasive evidence of an arrangement exists, delivery has occurred, the license fee is fixed and determinable and the collection of the fee is probable. The Company utilizes written contracts as a means to establish the terms and conditions by which our products, services and maintenance support are sold to our customers. Delivery is considered to have occurred when title and risk of loss have been transferred to the customer, which generally occurs after a license key has been delivered electronically to the customer. Revenue for arrangements with extended payment terms in excess of one year is recognized when the payments become due, provided all other recognition criteria are satisfied. If collectability is not considered probable, revenue is recognized when the fee is collected. Our typical end user license agreements do not contain acceptance clauses. However, if acceptance criteria are required, revenues are deferred until customer acceptance has occurred.

If these criteria are not met, then revenue is deferred until such criteria are met or until the period(s) over which the last undelivered element is delivered. If there is objective and reliable evidence of fair value for all units of accounting in an arrangement, the arrangement consideration is allocated to the separate units of accounting based on each unit's relative fair value. There may be cases, however, in which there is objective and reliable evidence of fair value of the undelivered item(s) but no such evidence for the delivered item(s). In those cases, the residual method is used to allocate the arrangement consideration. Under the residual method, the amount of consideration allocated to the delivered item(s) equals the total arrangement consideration less the aggregate fair value of the undelivered item(s). We apply the revenue recognition policies discussed below to each separate unit of accounting.

Astea allocates revenue to each element in a multiple-element arrangement based on the elements' respective fair value, determined by the price charged when the element is sold separately. Specifically, Astea determines the fair value of the maintenance portion of the arrangement based on the price, at the date of sale, if sold separately, which is generally a fixed percentage of the software license selling price. The professional services portion of the arrangement is based on hourly rates which the Company charges for those services when sold separately from software. If evidence of fair value of all undelivered elements exists, but evidence does not exist for one or more delivered elements, then revenue is recognized using the residual method. If an undelivered element for which evidence of fair value does not exist, all revenue in an arrangement is deferred until the undelivered element is delivered or fair value can be determined. Under the residual method, the fair value of the undelivered elements is deferred and the remaining portion of the arrangement fee is recognized as revenue. The proportion of the revenue recognized upon delivery can vary from quarter-to-quarter depending upon the determination of vendor-specific objective evidence ("VSOE") of fair value of undelivered elements. The residual value, after allocation of the fee to the undelivered elements based on VSOE of fair value, is then allocated to the perpetual software license for the software products being sold.

When appropriate, the Company may allocate a portion of its software revenue to post-contract support activities or to other services or products provided to the customer free of charge or at non-standard rates when provided in conjunction with the licensing arrangement. Amounts allocated are based upon standard prices charged for those services or products which, in the Company's opinion, approximate fair value. Software license fees for resellers or other members of the indirect sales channel are based on a fixed percentage of the Company's standard prices. The Company recognizes software license revenue for such contracts based upon the terms and conditions provided by the reseller to its customer. The Company regularly communicates with its resellers and recognizes revenue based on information from its resellers regarding possible returns and collectability. However, the Company does not have a history of returns from the resellers.

In subscription based arrangements, even though customers use the software element, they generally do not have a contractual right to take possession of the software at any time during the hosting period without significant penalty to either run the software on its own hardware or contract with an unrelated third party to host the software. Accordingly, these SaaS arrangements, including the software license fees within the arrangements, are accounted for as subscription services provided all other revenue recognition criteria have been met. The subscription revenue is recognized on a straight-line basis over the service period. A SaaS contract is generally 1 to 3 years in duration. In accordance with generally accepted accounting principles, the Company may not recognize any SaaS revenue before the customer goes live, to ensure that the revenue will match the use of services. The implementation period is typically between 8 and 10 months. When upfront implementation, consulting and training services are bundled with the subscription based arrangement, these services are recognized over the life of the initial contract, once the project goes live.

The post-contract support on perpetual licenses provides for technical support and unspecified updates to the Company's software products. Post-contract support is charged separately for renewals of annual maintenance in subsequent years. Fair value for maintenance is based upon either renewal rates stated in the contracts or separate sales of renewals to customers. Revenue is recognized ratably, or monthly, over the term of the maintenance period, which is typically one year.

Consulting and training service revenue are generally unbundled and, therefore, recognized at the time the services are performed except when these services are bundled with subscription revenues. If the Company has any fixed-price arrangements for services, the revenue is recognized using the proportional performance method based on direct labor hours incurred to date as a percentage of total estimated direct labor hours required to complete the project. Fees from licenses sold together with consulting services are generally recognized upon shipment, provided that the contract has been executed, delivery of the software has occurred, fees are fixed and determinable and collection is probable. The Company offers a variety of consulting services that include project management, implementation, data conversion, integration, custom report writing and training. Our professional services are generally billed on a time and materials basis using hourly rates together with reimbursement for travel and accommodation expenses. We recognize revenue as these professional services are performed. On rare occasions these consulting service arrangements involve acceptance criteria. In such cases, revenue is recognized upon acceptance.

We believe that our accounting estimates used in applying our revenue recognition are critical because:

- the determination that it is probable that the customer will pay for the products and services purchased is inherently judgmental;
- the allocation of proceeds to certain elements in multiple-element arrangements is complex;
- the determination of whether a service is essential to the functionality of the software is complex;
- establishing company-specific fair values of elements in multiple-element arrangements requires adjustments from time-to-time to reflect recent prices charged when each element is sold separately; and
- the determination of the stage of completion for certain consulting arrangements is complex.

Changes in the aforementioned items could have a material effect on the type and timing of revenue recognized.

For the years ended December 31, 2017 and 2016, the Company recognized $26,334,000 and $25,798,000, respectively, of revenue related to software license fees, subscription revenue, and services and maintenance.

We present taxes assessed by a governmental authority including sales, use, value added and excise taxes on a net basis and therefore the presentation of these taxes is excluded from our revenues and is included in accrued expenses in the accompanying consolidated balance sheets until such amounts are remitted to the taxing authority.

Cost of Software License Fees

Cost of software license fees includes amortization of capitalized software development costs and the cost of third party licenses sold to customers.

Cost of Subscriptions

Cost of subscription includes compensation and benefits provided to our professional service employees who provide administrative hosting services, third party hosting costs, and allocated facility costs.

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Cost of Services and Maintenance

Cost of services and maintenance includes compensation and benefits provided to our professional service employees, independent consultants, telecommunication costs, outside monitoring costs, unreimbursed travel expenses and allocated facility costs.

Product Development

Product development costs include our research and development expenses which consist primarily of personnel, contractors, and related costs, including salaries and employee benefits for software engineers. To date, our product development efforts have been devoted to new products and service offerings and increases in features and functionality of our existing products and services.

Sales and Marketing

Sales and marketing costs include compensation, commissions and benefits paid to our sales and marketing teams, telecommunication costs, travel costs, marketing and sales costs, professional fees and facility costs.

General and Administrative Costs

General and administrative costs include salaries, benefits and related costs for the Company's finance, administrative and executive management personnel, external accounting and audit costs, bad-debt expense, professional fees, corporate facility costs, Board of Director expenses and other costs associated with being a public company.

Depreciation and Amortization

Depreciation is calculated on a straight-line basis over the estimated useful lives of the assets, which range from three to ten years for computers and related equipment, furniture and fixtures, software and office equipment, and the lesser of the lease term or estimated useful life for leasehold improvements.

Deferred Revenue

Deferred revenue includes amounts billed to or received from customers for which revenue has not been recognized. This generally results from post-contract support, software installation, subscription fees for hosting, hosting consulting fees not yet recognized and training or license revenue which has been deferred until all revenue recognition requirements have been met or services performed.

Accounts Receivable and Allowance for Doubtful Accounts

The Company evaluates the adequacy of its allowance for doubtful accounts at the end of each quarter. In performing this evaluation, the Company analyzes the payment history of its customer accounts that are significantly past due, subsequent cash collections on these accounts and comparative accounts receivable aging statistics. Based on this information, along with consideration of the general strength of the economy, the Company develops what it considers to be a reasonable estimate of the uncollectible amounts included in accounts receivable. This estimate involves significant judgment by the management of the Company. Actual uncollectible amounts may differ from the Company's estimate.

Unbilled accounts receivables are established when revenue is deemed to be recognized based on the Company's revenue recognition policy, but due to contractual restraints over the timing of invoicing, the Company does not have the right to invoice the customer by the balance sheet date.

We believe that our estimate of our allowance for doubtful accounts is critical because of the significance of our accounts receivable balance relative to total assets. If the general economy deteriorated, or factors affecting the profitability or liquidity of the industry changed significantly, then this could affect the accuracy of our allowance for doubtful accounts.

Capitalized Software and Research and Development Costs

The Company capitalizes software development costs incurred during the period subsequent to the establishment of technological feasibility through the product's availability for general release. Costs incurred prior to the establishment of technological feasibility are charged to product development expense as they are incurred. Product development expense includes payroll, employee benefits, other headcount-related costs associated with product development and any related costs to third parties under sub-contracting or net of any collaborative arrangements.

Capitalized software development costs are amortized on a product-by-product basis over the greater of the ratio of current revenues to total anticipated revenues or on a straight-line basis over the estimated useful lives of the products beginning with the initial release to customers. The Company's estimated life for its capitalized software products is two years based on current sales trends and the rate of product release. The Company continually evaluates whether events or circumstances have occurred that indicate that the remaining useful life of the capitalized software development costs should be revised or that the remaining balance of such assets may not be recoverable. The Company evaluates the recoverability of capitalized software based on the net realizable value of each product, which includes the estimated future gross revenues from that product reduced by the estimated future costs of completing and disposing of that product, including the costs of performing maintenance and customer support required to satisfy the Company's responsibility set forth at the time of sale. As of December 31, 2017, management believes that no revisions to the remaining useful lives or write-downs of capitalized software development costs are required.

We believe that our estimate of our capitalized software costs and the period for their amortization is critical because of the significance of our balance of capitalized software costs relative to our total assets. Potential impairment is determined by comparing the balance of unamortized capitalized software costs to the net realizable value for a capitalized software product. If efforts to sell that software product are terminated, or if the net realizable value from that software product drops below the unamortized balance, then an impairment would be recognized.

Stock-Based Compensation – Option Plans

The Company estimates the fair value of stock options granted using the Black-Scholes-Merton ("Black-Scholes") option-pricing formula and amortizes the estimated option value using an accelerated amortization method where each option grant is split into tranches based on vesting periods. The Company's expected term represents the period that the Company's share-based awards are expected to be outstanding and was determined based on historical experience regarding similar awards, giving consideration to the contractual terms of the share-based awards and employee termination data. Executive level employees who hold a majority of options outstanding, and non-executive level employees each have similar historical option exercise and termination behavior and thus were grouped for valuation purposes. The Company's expected volatility is based on the historical volatility of its traded common stock and places exclusive reliance on historical volatilities to estimate our stock volatility over the expected term of its awards. The Company has historically not paid dividends to common stockholders and has no foreseeable plans to issue dividends. The risk-free interest rate is based on the yield from the U.S. Treasury zero-coupon bonds with an equivalent term.

Under the Company's stock option plans, options awards generally vest over a four-year period of continuous service and have a 10-year contractual term. The fair value of each option is amortized using an accelerated amortization method over the option's vesting period. The fair value of each option is estimated on the date of the grant using the Black-Scholes option pricing formula. There were 135,000 and 115,000 options granted during the years ended December 31, 2017 and 2016, respectively.

Accounting for Income Taxes

Deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities and operating loss and tax credit carryforwards and are measured using the enacted tax rates and laws that will be in effect when the difference and carryforwards are expected to be recovered or settled. A valuation allowance for deferred tax assets is provided when we estimate that it is more likely than not that all or a portion of the deferred tax assets may not be realized through future operations. This assessment is based upon consideration of available positive and negative evidence which includes, among other things, our most recent results of operations and expected future profitability. We consider our actual historical results to have a stronger weight than other more subjective indicators when considering whether to establish or reduce a valuation allowance on deferred tax assets.

As of December 31, 2017, we had approximately $12.6 million of net deferred tax assets, against which we provided a 100% valuation allowance. Our net deferred tax assets were generated primarily by operating losses. Accordingly, it is more likely than not, that we will not realize these assets through future operations.

The Company prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. Estimated interest is recorded as a component of interest expense and penalties are recorded as a component of general and administrative expenses.

In December 2017, the Tax Cuts and Jobs Act ("Tax Act") was enacted into law, significantly changing income tax law that affects U.S corporations. Key changes included a corporate tax rate reduction from 35 percent to 21 percent effective January 1, 2018, expensing of certain qualified property, significant changes to the U.S international tax system such as a one-time transition tax on accumulated foreign earnings, and how foreign earnings are subject to U.S. tax. The Company is required to recognize the effects of the tax law changes in the period of enactment, including the determination of the transition tax and the re-measurement of deferred taxes as well as to re-assess the realizability of the deferred tax assets. Subsequent to the enactment of the Tax Act, the SEC staff issued Staff Accounting Bulletin No. 118, Income Tax Accounting Implications of the Tax Cuts and Jobs Act ("SAB 118"), which allows companies to record provisional amounts related to the effects of the Tax Act during a measurement period not to extend beyond one year from the enactment date. Due to the timing of the Tax Act and additional guidance and interpretations that may be issued by the U.S. Treasury Department, the Internal Revenue Service ("IRS") and other standard-setting bodies in the future, the Company has not completed its analysis of the income tax effects of the Tax Act. The provisional estimates will be adjusted during the measurement period defined under SAB 118, based upon the Company's ongoing analysis of its data and tax positions along with new guidance from regulators and interpretations of the law.

New Accounting Pronouncements

In May 2014, as part of its ongoing efforts to assist in the convergence of U.S. GAAP and International Financial Reporting Standards, the Financial Accounting Standards Board (FASB) issued a new standard related to revenue recognition. Under the new standard, recognition of revenue occurs when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the entity expects to receive in exchange for those goods or services. The standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. Additionally, under the new guidance, expenses incurred, will be deferred as an asset and will be amortized over the period that services or goods are transferred to the customer. Hence, the new guidance will result in the Company reporting deferred costs (asset) on our consolidated balance sheet. The new standard will be effective for the Company beginning January 1, 2018 at which point we plan to adopt the standard using the "modified retrospective method." Under that method, we will apply the rules to all contracts existing as of January 1, 2018, recognizing in beginning retained earnings an adjustment for the cumulative effect of the change and providing additional disclosures comparing results to previous accounting standards. We believe our notes to the consolidated financial statements related to revenue recognition will be expanded as noted below.

The Company's implementation team has continued to make progress in its project plan, which includes evaluating customer contracts across the organization, implementing changes to its accounting system to allow the Company to track revenue and cost by customer, developing policies, processes and tools to report financial results including expanding our disclosures in the financial statements, and implementing and updating the Company's internal controls over financial reporting that will be necessary under the new standard. The Company has designed specific controls related to revenue recognition under the new guidance that were implemented beginning in January 2018. The next step is to identify any differences that would result from applying the new requirements and controls of the new standard to its perpetual and subscription sales contracts. Although the Company is continuing to review certain aspects of its policies and practices, the Company's analysis of its perpetual contracts under the new standard supports the recognition of its license fee revenue at the time the license is shipped, consistent with its current revenue policy.

As noted above, the FASB issued guidance on revenue from contracts that supersedes upon adoption previous revenue recognition guidance, including industry-specific guidance. The underlying principle requires the Company to recognize revenue for the transfer of goods or services to customers at an amount that the Company expects to be entitled to in exchange for those goods or services. The guidance provides a five-step analysis of transactions to determine when and how revenue is recognized. Other major provisions include the deferral of certain contract costs, consideration of time value of money in the transaction price, and in certain situations, allowing estimates of variable consideration to be recognized before contingencies are resolved. The Company will also be required to enhance disclosures regarding the nature, timing and uncertainty of revenue and cash flows arising from the Company's contracts with its customers.

The Company performed an analysis impact for revenue recognition under the new guidance, we completed the evaluation on the largest perpetual license sales in 2017 and other license deals in the prior years with potential additional performance obligations. It was determined after review of the contracts that there would be no impact on revenue recognized or any new performance obligaions identified for these customers as it relates to the new guidance.

Based on the evaluation of our current contracts and revenue streams, revenue recognition is mostly consistent under both the previous and new standard as noted above, with the exception of subscription costs, which are described below. Upon adoption, the Company will continue to recognize subscription revenue once a customer goes-live ratably over the remaining contract period. This contract period is typically 1 to 3 years. The average customer takes about 8 to 10 months to go live.

The previous accounting policy for costs incurred to implement a hosting customer was to report those costs in the period incurred. Upon adoption of the new standard, implementation costs will be deferred on the balance sheet and subsequently expensed ratably over the remaining contract period, once the customers go-live. The expense will be recognized with the revenue ratably over the remaining life of the contract. As a result of this change, the deferred costs (asset) will increase approximately $536,000 effective January 1, 2018. These deferred costs will then be expensed in future consolidated statements of operations over the remaining life of the subscription contract, commencing once the customer's hosted system goes live. The aforementioned change in classification on the consolidated financial statements is expected to have an immaterial impact on our future gross profit and net income. While we are substantially complete with the process of quantifying the impacts that will result from applying the new guidance, our assessment will be finalized during the first quarter of 2018.

The disclosure in our notes to the consolidated financial statements related to revenue recognition will be expanded under the new standard, specifically around the quantitative and qualitative information about performance obligations, changes in assets and revenue recognition as it relates to the five-step analysis.

In February 2016, the FASB issued guidance for accounting for leases. The guidance requires lessees to recognize assets and liabilities related to long-term leases on the balance sheet and expands disclosure requirements regarding leasing arrangements. The guidance is effective for reporting periods beginning after December 15, 2018 and early adoption is permitted. The guidance must be adopted on a modified retrospective basis and provides for certain practical expedients. The Company expects to adopt this guidance in the first quarter of 2019 and we currently expect that the adoption of this guidance will likely change the way we account for our operating leases and will likely result in recording the future benefits of those leases as an asset and the related minimum lease payments as a liability on our consolidated balance sheets. The Company has not yet begun to quantify the specific impacts of this guidance.

In January 2018, the FASB released guidance on the accounting for tax on the global intangible low-taxed income ("GILTI") provisions of the Tax Cuts and Jobs Act (the "Act"). The GILTI provisions impose a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. The guidance indicates that either accounting for deferred taxes related to GILTI inclusions or to treat any taxes on GILTI inclusions as period cost are both acceptable methods subject to an accounting policy election. Effective the first quarter of 2018, the Company will elect to treat any potential GILTI inclusions as a period cost as we are not projecting any material impact from GILTI inclusions and any deferred taxes related to any inclusion would be immaterial.

Results of Operations

The following table sets forth for the periods indicated, selected financial data and the percentages of the Company's total revenues by each line item for the periods presented:

Years ended December 31,	2017		2016	
Revenues:				
Software license fees	9.6	%	10.5	%
Subscriptions	10.4		15.5	
Services and maintenance	80.0		74.0	
Total revenues	100.0	%	100.0	%
Cost of revenues:				
Cost of software license fees	10.0	%	9.2	%
Cost of subscriptions	3.2		3.5	
Cost of services and maintenance	56.8		53.0	
Total cost of revenues	70.0		65.7	
Gross profit	30.0		34.3	
Operating Expenses:				
Product development	5.0		4.3	
Sales and marketing	13.6		16.3	
General and administrative	11.4		11.6	
Total operating expenses	30.0		32.2	
Income from operations	0.0		2.1	
Interest expense, net	0.8		0.4	
Income tax (benefit) expense	(1.2	)	0.1	
Net income	0.4	%	1.6	%

Comparison of Years Ended December 31, 2017 and 2016

Revenues

Total revenues increased $536,000 or 2%, to $26,334,000 for the year ended December 31, 2017 from $25,798,000 for the year ended December 31, 2016. Software license revenues decreased 6% in 2017 compared to 2016. Subscription revenues decreased $1,255,000 or 31% to $2,736,000 from $3,991,000 in 2016. Services and maintenance fees for 2017 amounted to $21,065,000, a 10% increase from 2016.

Software license fee revenues decreased $166,000 or 6% to $2,533,000 in 2017 from $2,699,000 in 2016. Astea Alliance license revenues decreased to $2,256,000 in 2017 from $2,638,000 in 2016, a decrease of 14%. The decrease resulted from a decrease in Astea Alliance license sales in Europe and the U.S., partially offset by an increases in Astea Alliance license sales in the Asia Pacific region. FieldCentrix license revenue increased $216,000 to $277,000 in 2017 compared to $61,000 in 2016. FieldCentrix license sales consisted of additional user licenses sold to existing customers who expanded their user counts in 2017.

Subscription revenue for the year ended December 31, 2017 was $2,736,000, a decrease of 31%, compared to $3,991,000 in 2016. The decrease from 2016 resulted from $1,066,000 of subscription revenue being recognized in

2016 due to the cancellation of a hosting contract by a customer who had not yet gone live, and was acquired during the year. The acquiring company mandated that all software be on the acquiring company's existing platforms. Upon termination of the contract, in 2016, all deferred subscription fees they had paid, were reported as subscription revenue. In addition, a customer converted from a hosting agreement to a perpetual license at the end of 2016 which eliminated $90,000 of annual reoccurring hosting revenue in 2017 and future periods. The decrease in subscription revenue was partially offset by completion of the implementation process for certain customers which allowed them to go live on the SaaS solution in 2017. The revenue for subscription services may not be recognized until the customers go-live. The implementation period is typically between 8 to 10 months.

Total services and maintenance revenues increased $1,957,000 or 10% to $21,065,000 in 2017 from $19,108,000 in 2016. Service and maintenance revenue increased $2,062,000, or 12% on the Astea Alliance products. The increase was mainly attributable to an increase in services in all regions of the Company, except the U.S which decreased 21% from 2016. Japan service revenue increased 267% or $2,434,000 compared to 2016 which resulted from several license agreements signed over the past 12 months. In addition, a UK hosting customer went live in 2017. Once a hosted customer goes live, we start to recognize deferred implementation fees over the remaining life of the contract. In addition, there was a slight increase in maintenance revenue from license sales that closed in 2017. The decrease in U.S. services revenue in 2017 resulted from a subscription customer that terminated its contract at the end of 2016. As a result, the Company recognized all the accumulated hosting deferred service revenues upon contract termination. Due to the extended implementation period, the hosted deferred service revenue of $2,179,000 was recognized in 2016. Service and maintenance revenues generated by FieldCentrix decreased by $106,000 or 5% to $2,205,000 in 2017 compared to $2,311,000 during the same period in 2016. The decrease is due to customers transitioning to Astea Alliance in 2017.

In 2017, there were no customers that accounted for 10% or more of total revenues. In 2016, one customer accounted for 13% of total revenues.

Costs of Revenues

Costs of software license fees increased 11% to $2,631,000 in 2017 from $2,368,000 in 2016. Included in the cost of software license fees is the amortization of capitalized software development costs and the cost of all third party software embedded in the Company's software licenses sold to customers. Amortization of capitalized software development costs increased 12% to $2,581,000 in 2017 compared to $2,300,000 in 2016. The increase resulted primarily from a full year amortization of Version 14 after its release in October 2016 and amortization of Version 14.5 which was released in September 2017 partially offset by Version 11.5 being fully amortized as of June 30, 2016, Version 12 being fully amortized by February 2017 and Version 12.5 being fully amortized by September 30, 2017. Cost of software license fees in 2016 did not contain any amortization from Version 14.5. The gross margin percentage on software license sales was (4%) in 2017 and 12% in 2016. The decrease in license gross margin resulted primarily from decreased license sales and increased amortization in 2017.

Cost of subscriptions decreased 5% to $852,000 in 2017 compared to $901,000 in 2016. The decrease in cost of subscriptions is mainly attributed to reduced hosting fees from customers who cancelled their agreements in 2016 and the Company switching to a lower cost hosting provider in 2017, partially offset by an increase in hosting costs from new customers added in 2017. The gross margin percentage on subscription revenue was 69% in 2017 compared to 77% in 2016. The decline in the gross margin is mainly due to the significant amount of subscription revenue recognized from the customer that terminated their subscription agreement in 2016, partially offset by a decrease in hosting costs due to the lower cost provider.

Costs of services and maintenance increased 9% to $14,956,000 in 2017 from $13,670,000 in 2016. The increase in cost of service and maintenance is attributed primarily to increases in contracted consulting services in Japan and the U.S., and an increase in head count and travel expenses in all regions due to the large backlog of services. The service and maintenance gross margin percentage was 29% in 2017 and 28% in 2016. The increase in gross margin on services and maintenance revenues resulted from an increase in service revenue, partially offset by the increase in costs, as discussed above.

Gross Profit

Total gross profit decreased 11% to $7,895,000 in 2017 from $8,859,000 in 2016. As a percentage of revenue, gross profit was 30% for the year ended December 31, 2017 compared to 34% for year ended December 31, 2016. The year-over-year decrease in gross profit was largely driven by the recognition of $2,179,000 in professional service revenue recognized upon the termination of a SaaS contract by a customer in 2016 for which part of the related cost had been reported the prior year and an increase in cost of license fees that resulted from higher amortization of capitalized software costs in 2017. Partially offsetting these components was an increase in revenues and a decrease in the cost of subscriptions.

Operating Expenses

Product Development

Product development expenses increased $204,000 to $1,303,000 in 2017 from $1,099,000 in 2016. Fluctuations in product development expense from period to period can vary due to the amount of development expense which is eligible for capitalization. Software development costs of $2,633,000 were capitalized in 2017 compared to $2,939,000 during the same period in 2016. The gross development expense was $3,936,000 in 2017, a decrease of 2%, compared to gross development expense of $4,038,000 for 2016. The decrease was primarily due to a favorable exchange rate on the Israeli shekel relative to the U.S. dollar, as the majority of development work is performed in Israel. Product development as a percentage of revenues was 5% in 2017 and 4% in 2016.

Sales and Marketing

Sales and marketing expenses decreased 15%, or $629,000, to $3,575,000 in 2017 from $4,204,000 in 2016. The decrease in sales and marketing expense is attributable to a decrease in sales headcount, lower travel costs, lower commissions on sales in the U.S. and Europe due to the decline in license sales in those regions and lower marketing costs related to lower salaries due to an open executive and lead generation positions through the majority of 2017 partially offset by an increase in marketing costs related to the Astea Users' Conference held by the Company in June 2017, adding a Vice President of Sales in the U.S in mid-2017 and increased commissions in Japan resulting from increased license sales in Japan compared to 2016. The Company does not expect a similar decline in sales and marketing costs in 2018 as it is increasing headcount, and focusing on expanding its market presence through additional marketing efforts to increase awareness of the Company's products in order to increase lead generation. This will occur through additional webinars focused on the vertical industries in which the Company operates, attendance at more trade shows, and new strategies to increase lead generation for its sales force. As a percentage of revenues, sales and marketing expenses was 14% in 2017 compared to 16% in 2016. The decreased percentage is due to decreased costs in both sales and marketing in 2017.

General and Administrative

General and administrative expenses consist of salaries, benefits and related costs for the Company's finance, administrative and executive management personnel, legal costs, accounting costs, bad debt expense, currency exchange gains and losses, and various costs associated with the Company's status as a public company. General and administrative expenses decreased less than 1%, or $2,000, to $2,994,000 in 2017 from $2,996,000 in 2016. The decrease was mainly driven by reduced executive management costs, lower rent, timing of tax and other accounting fees, and lower travel expenses partially offset by additional costs to hire and retain inside legal counsel, increased bad debt expense, and currency losses in 2017. As a percentage of revenues, general and administrative expenses were 11% for 2017 compared to 12% for 2016. The Company remains focused on controlling its operating costs.

Net Interest Expense

Net interest expense was $225,000 in 2017 compared to $113,000 in 2016. The increase in interest expense resulted from the Company canceling its line of credit with SVB Bank and fully amortizing the remaining $35,000 in deferred financing costs related to that line of credit and increased interest expense resulted due to the term loan and line of credit from Bridge Bank, with an increased borrowing capacity, that started in August 2017. In addition, in 2017, the Company had some short term borrowings on its line of credit with its director/officer that it did not have in 2016.

Income Tax (Benefit) Expense

The Company recorded an income tax benefit of ($301,000) in 2017 compared to income tax expense of $37,000 in 2016. The Company recorded a $362,000 benefit in 2017 for its AMT credit carryforward pursuant to the Tax Cuts & Jobs Act of 2017. Most of the tax expense resulted from the tax provision in Israel which increased due to an increase in net income in Israel. Israel is taxed at 7.5% of its pre-tax income.

International Operations

Total revenues from the Company's international operations increased by $2,980,000 or 32% to $12,332,000 in 2017 from $9,352,000 in 2016. The increase in international revenues is primarily due to an increase in license, service and maintenance revenues in the Asia Pacific region, partially offset by a decline in license and subscription revenues in Europe.

Liquidity and Capital Resources

Operating Activities

The Company generated $3,676,000 of cash from operating activities in 2017 compared to $1,590,000 in 2016. The increase in operating cash flows of $2,086,000 resulted from an increase in cash provided by deferred revenues of $3,064,000, an increase in non-cash expenses of $513,000, an increase in cash provided by accounts payable and accrued expenses of $428,000; partially offset by an increase in cash used in accounts receivable of $1,211,000, an increase in cash used in prepaid expenses of $96,000, a decrease in net income of $311,000 and an increase in cash used in other assets of $301,000.

Investing Activities

The Company used $308,000 less for investing activities in 2017 compared to 2016. The decrease in cash used for investing activities is primarily attributable to a decrease of $306,000 in cash used for capitalized software development costs and a decrease of $14,000 of cash used for the purchases of property and equipment, partially offset by proceeds from the sale of short-term investments of $12,000 in 2016.

Financing Activities

The Company provided $276,000 in cash from financing activities in 2017, a decrease of $35,000 compared to 2016. Payments of preferred stock dividends were $250,000 in 2017 compared to $220,000 in 2016. In addition, the Company borrowed $6,734,000 and repaid $8,661,000 in 2017 compared to borrowing $600,000 and repaying $47,000 in 2016 on its line of credit from SVB. The line of credit with SVB was cancelled and fully repaid in 2017. The Company borrowed $3,843,000 and repaid $1,538,000 on its line of credit and term note with WAB in 2017. In addition, the Company paid $77,000 in deferred financing costs in 2017 compared to $30,000 in 2016.

The cash effect of exchange rate changes on the U.S. dollar related to other currencies in which the Company operates, primarily the Australian dollar, Japanese yen, the Euro, the British pound sterling and Israel shekel, provided an outflow of $1,000 in 2017 compared to an inflow of $26,000 in 2016.

The Company has a history of net losses and an accumulated deficit of $35,338,000 as of December 31, 2017. In 2017, the Company generated net income of $99,000 compared to net income of $410,000 in 2016. At December 31, 2017, the Company had a working capital ratio of .58:1, with cash and cash equivalents of $1,924,000 compared to December 31, 2016 when the Company had working capital ratio of .53:1 and cash and cash equivalents of $661,000. The increase in cash and cash equivalents in the year ended December 31, 2017 was primarily driven by an increase in cash provided by operations in 2017 compared to 2016 and a decrease in capitalized software development costs, partially offset by increased cash outlays for the Company's line of credit.

As of December 31, 2017, the Company owed $2,305,000 against the line of credit from Western Alliance Bank ("WAB"). As of December 31, 2017, the availability under the line of credit was $95,000. In April 2017, the Company extended its Revolving Loan Agreement and associated Revolving Promissory Note with its Chief Executive Officer/Director. The loan provides an unsecured $1,000,000 revolving line of credit to the Company. The proceeds of the borrowings, if needed, will be used by the Company for operating activities. If an extension of the line of credit is appropriate and agreed to by the Chief Executive Officer/Director, we will then obtain the necessary approvals from WAB. As of December 31, 2017, there are no amounts outstanding with the Chief Executive Officer/Director. In addition, the Company has a term loan with WAB for $400,000 that is due to be fully repaid by April 2018. As of December 31, 2017 the Company owed $225,000 against the term loan. The Company has projected revenues that management believes will provide sufficient funds along with available borrowings under its lines of credit to sustain its continuing operations through at least March 31, 2019.

The Company was in compliance with the WAB financial and liquidity covenant as of December 31, 2017 and expects to be able to continue to comply with required covenants under the agreement with WAB for at least the next year. As a result, the amounts due to WAB under the line of credit and term loan as of December 31, 2017 were classified in the accompanying consolidated balance sheet in accordance with the repayment terms stipulated in the agreement with WAB. In the event the Company does not meet the required covenants after December 31, 2017 and WAB does not grant a waiver or forbearance agreement, and the Company believes that it does not have adequate liquidity to operate, if necessary, the Company will implement a cost cutting plan to reduce its expenditures to the appropriate level that matches its operating cash flows.

Our primary cash requirements are to fund operations which mainly include personnel-related costs, marketing costs, third party costs related to hosting and software, general and administrative costs associated with being a public company, travel costs, and quarterly preferred stock dividends. The Company expects to continue to incur operating expenses for research and development and investment in software development costs to achieve its projected revenue growth. We continually evaluate our operating cash flows which can vary subject to the actual timing of expected new sales compared to our expectations of those sales and are sensitive to many factors, including changes in working capital and our results of operations. However, projections of future cash needs and cash flows are subject to risks and uncertainty.

Management's current operating plan is to continually monitor its operating expenses in order to be aligned with expected revenues. The primary area of focus will continue to be headcount, travel costs and costs from outside consultants. The Company remains focused on maximizing revenue from its revenue generating resources and will continue to repurpose certain personnel, if necessary, to become billable so the Company can continue to improve its liquidity. The Company has a substantial professional services backlog that resulted from new customers that were added in 2017 as well as upgrade projects from our existing customers as they move to the latest version of Astea Alliance. In 2017, the Company implemented steps to reduce total operating expenses in order to maintain our liquidity. Management has implemented new marketing initiatives in 2018 that we believe will directly drive new business which is essential to our growth. We expect our revenues from existing customers along with growth from the new marketing initiatives to generate sufficient cash to fund operations through at least March 31, 2019. As previously noted, if the Company's actual results fall short of expectations, the Company will proactively make cost adjustments to improve the Company's operating cash flows. In addition, we do not expect to increase our current level of capital expenditures. We are planning to maintain the similar level of investment in software development.

Our operations are subject to certain risks and uncertainties including, among others, current and potential competitors with greater resources, dependence on our significant and existing customer base, closing license and subscription sales in a timely manner, lack of a history of consistently generating net income and uncertainty of future profitability, and possible fluctuations in financial results.

Contractual Obligations and Commercial Commitments

The following tables summarize our contractual and commercial obligations, as of December 31, 2017:

	Payment Due By Period				
	Total	2018	2019-2020	2021-2022	thereafter
Contractual Cash Obligations:					
Operating Leases	$4,035,000	$1,040,000	$1,810,000	$1,184,000	$ 1,000
Term Note	225,000	225,000	-	-	-
Line of Credit	2,305,000	-	2,305,000	-	-
Total	$6,565,000	$1,265,000	$4,115,000	$1,184,000	$ 1,000

Dividends may be paid on common stock, when and if, declared by the Board of Directors. However, no dividend has been paid on common stock since July 2000. Dividends on convertible preferred stock are payable at a rate of 10% on the Series A and 10% on the Series B on a quarterly basis, as declared by the Board of Directors.

Off-Balance Sheet Transactions

There are no off balance sheet transactions that would require disclosure in the above contractual obligations and commercial commitments table.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk.

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. Our market risk exposure is primarily a result of fluctuations in interest rates. We do not hold financial instruments for trading purposes.

Interest Rate Risk

At December 31, 2017, the Company's debt consisted of a line of credit and term note with WAB. At December 31, 2017 the outstanding balance owed on our line of credit under the revolving credit facility with WAB was $2,305,000 and term note was $225,000. At December 31, 2017 there were no amounts outstanding with its director/officer or SVB. Our credit facility with WAB has a variable interest rate, which exposes us to interest rate risk.

At December 31, 2016, the Company's debt consisted of a line of credit with SVB that had an outstanding balance of $1,927,000. The revolving credit facility was repaid and cancelled in 2017.

Foreign Currency Risk

All costs associated with the Company's foreign operations in Europe, Asia/Pacific, Japan and Israel are denominated in their respective local currencies and translated into U.S. dollars for financial reporting. As a result, the Company is exposed to risks to the extent that the rate of inflation in any of its foreign operating regions differs from the rate of revaluation of their related currencies in relation to the U.S. dollar or if the timing of such revaluations lags behind inflation in these regions. In such an event, the costs of the Company's operations in these regions, measured in U.S. dollars, will change and the U.S. dollar measured results of operations will be affected.

The Company does not use foreign currency forward exchange contracts or purchased currency options to hedge local currency cash flows or for trading purposes. All sales arrangements with international customers are denominated in foreign currency. For the year ended December 31, 2017, approximately 47% of the Company's overall revenue resulted from sales to customers outside the United States. A 10% change in the value of the U.S. dollar relative to each of the currencies of the Company's non-U.S.-generated sales would not have resulted in a material change to its results of operations. The Company does not expect any material loss with respect to foreign currency risk.

Item 8. Financial Statements and Supplementary Data.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders of
Astea International Inc.

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Astea International Inc. and Subsidiaries (the "Company") as of December 31, 2017 and 2016, and the related consolidated statements of operations, comprehensive income (loss), changes in stockholders' deficit, and cash flows for each of the years then ended and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2017 and 2016, and the consolidated results of their operations and their cash flows for each of the years then ended, in conformity with accounting principles generally accepted in the United States of America.

Basis for Opinion

These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on the Company's financial statements based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) ("PCAOB") and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. The Company is not required to have, nor were we engaged to perform, an audit of its internal control over financial reporting. As part of our audits we are required to obtain an understanding of internal control over financial reporting but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control over financial reporting. Accordingly, we express no such opinion.

Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ EisnerAmper LLP

We have served as the Company's auditor since 2015.

EISNERAMPER LLP
Philadelphia, Pennsylvania
March 29, 2018

ASTEA INTERNATIONAL INC. AND SUBSIDIARIES
CONSOLIDATED BALANCE SHEETS

	December 31, 2017	2016
ASSETS		
Current assets:		
Cash and cash equivalents	$1,924,000	$661,000
Accounts receivable, net of reserves	6,589,000	5,596,000
Prepaid expenses and other current assets	295,000	304,000
Total current assets	8,808,000	6,561,000
Property and equipment, net	105,000	131,000
Capitalized software development costs, net	4,073,000	4,021,000
Restricted cash	77,000	69,000
Other long-term assets	506,000	152,000
Total assets	$13,569,000	$10,934,000
LIABILITIES AND STOCKHOLDERS' DEFICIT		
Current liabilities:		
Term note	$225,000	-
Accounts payable and accrued expenses	3,988,000	2,904,000
Deferred revenues	11,025,000	9,556,000
Total current liabilities	15,238,000	12,460,000
Long-term liabilities:		
Borrowings under line of credit- WAB	2,305,000	-
Borrowings under line of credit- SVB	-	1,927,000
Long term accrued expenses	312,000	332,000
Deferred revenues	504,000	384,000
Deferred tax liability	49,000	41,000
Total long-term liabilities	3,170,000	2,684,000
Commitments and Contingencies – Note 9		
Stockholders' deficit :		
Convertible preferred stock,$.01 par value, shares authorized 5,000,000:		
Series A issued and outstanding 826,000 shares	8,000	8,000
Series B issued and outstanding 797,000 shares	8,000	8,000
Common stock $.01 par value, 25,000,000 shares authorized; issued 3,636,000 shares; outstanding 3,594,000 shares	36,000	36,000
Additional paid-in-capital	31,710,000	32,075,000
Accumulated deficit	(35,338,000)	(35,437,000)
Accumulated other comprehensive loss	(1,055,000)	(692,000)

Treasury stock at cost, 42,000 common shares	(208,000)	(208,000)
Total stockholders' deficit	(4,839,000)	(4,210,000)
Total liabilities and stockholders' deficit	$13,569,000	$10,934,000

See accompanying notes to the consolidated financial statements.

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ASTEA INTERNATIONAL INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF OPERATIONS

	Years ended December 31, 2017	2016
Revenues:		
Software license fees	$2,533,000	$2,699,000
Subscriptions	2,736,000	3,991,000
Services and maintenance	21,065,000	19,108,000
Total revenues	26,334,000	25,798,000
Costs of revenues:		
Cost of software license fees	2,631,000	2,368,000
Cost of subscriptions	852,000	901,000
Cost of services and maintenance	14,956,000	13,670,000
Total cost of revenues	18,439,000	16,939,000
Gross profit	7,895,000	8,859,000
Operating expenses:		
Product development	1,303,000	1,099,000
Sales and marketing	3,575,000	4,204,000
General and administrative	2,994,000	2,996,000
Total operating expenses	7,872,000	8,299,000
Income from operations	23,000	560,000
Interest expense, net	225,000	113,000
(Loss) income before income taxes	(202,000)	447,000
Income tax (benefit) expense	(301,000)	37,000
Net income	99,000	410,000
Preferred dividend	500,000	500,000
Net loss allocable/available to common stockholders	$(401,000)	$(90,000)
Basic and diluted loss per share available to common stockholders	$(0.11)	$(0.03)
Weighted average shares outstanding used in computing basic and diluted loss per share	3,594,000	3,588,000

See accompanying notes to the consolidated financial statements.

ASTEA INTERNATIONAL INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)

	Years ended December 31,	
	2017	2016
Net income	$99,000	$410,000
Other comprehensive (loss) income:		
Foreign currency translation adjustment	(363,000)	260,000
Change in unrealized loss on investments available for sale, net of tax	-	(1,000)
Comprehensive (loss) income	$(264,000)	$669,000

See accompanying notes to the consolidated financial statements.

ASTEA INTERNATIONAL INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' DEFICIT

	Series A convertible preferred stock at par value	Series B convertible preferred stock at par value	Common stock	Additional paid-in-capital	Accumulated other compre-hensive loss	Accumulated deficit	Treasury stock	Total stockholders' deficit
Balances at December 31, 2015	$8,000	$8,000	$36,000	$32,417,000	$(951,000)	$(35,847,000)	$(208,000)	$(4,537,000)
Net income	—	—	—	—	—	410,000	—	410,000
Series A and B preferred dividends	—	—	—	(500,000)	—	—	—	(500,000)
Stock options exercised	—	—	—	8,000	—	—	—	8,000
Amortization of preferred stock dividend	—	—	—	30,000	—	—	—	30,000
Stock-based compensation	—	—	—	120,000	—	—	—	120,000
Other comprehensive loss	—	—	—	—	259,000	—	—	259,000
Balances at December 31, 2016	$8,000	$8,000	$36,000	$32,075,000	$(692,000)	$(35,437,000)	$(208,000)	$(4,210,000)
Net income	—	—	—	—	—	99,000	—	99,000
Series A and B preferred dividends	—	—	—	(500,000)	—	—	—	(500,000)
Stock-based compensation	—	—	—	135,000	—	—	—	135,000
Other comprehensive loss	—	—	—	—	(363,000)	—	—	(363,000)

Balances at December 31, 2017	$ 8,000	$ 8,000	$ 36,000	$ 31,710,000	$ (1,055,000)	$ (35,338,000)	$ (208,000)	$ (4,839,000)

See accompanying notes to the consolidated financial statements.

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ASTEA INTERNATIONAL INC. AND SUBSIDIARIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years ended December 31,	
	2017	2016
Cash flows from operating activities:		
Net income	$99,000	$410,000
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation and amortization	2,653,000	2,403,000
Amortization of deferred financing costs	113,000	38,000
Increase (decrease) in provision for doubtful accounts	174,000	(3,000)
Stock-based compensation	135,000	120,000
Deferred income taxes	8,000	12,000
Changes in operating assets and liabilities:		
Receivables	(1,228,000)	(17,000)
Prepaid expenses and other	(34,000)	62,000
Other assets	(355,000)	(54,000)
Accounts payable and accrued expenses	618,000	190,000
Deferred revenues	1,493,000	(1,571,000)
Net cash provided by operating activities	3,676,000	1,590,000
Cash flows from investing activities:		
Capitalized software development costs	(2,633,000)	(2,939,000)
Sale of investments available for sale	-	12,000
Purchases of property and equipment	(47,000)	(61,000)
Net cash used in investing activities	(2,680,000)	(2,988,000)
Cash flows from financing activities:		
Repayment on line of credit from director/officer	(350,000)	-
Proceeds from line of credit from director/officer	350,000	-
Repayment on term note	(175,000)	-
Proceeds from term note	400,000	
Repayment on line of credit from SVB	(8,661,000)	(47,000)
Proceeds from line of credit from SVB	6,734,000	600,000
Repayment on line of credit from WAB	(1,538,000)	-
Proceeds from line of credit from WAB	3,843,000	-
Dividends paid on preferred stock	(250,000)	(220,000)
Proceeds from exercise of stock options	-	8,000
Payment of deferred financing costs	(77,000)	(30,000)
Net cash provided by financing activities	276,000	311,000
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(1,000)	26,000
Net increase (decrease) in cash, cash equivalents and restricted cash	1,271,000	(1,061,000)
Cash, cash equivalents and restricted cash balance, beginning of year	730,000	1,791,000
	$2,001,000	$730,000

Cash, cash equivalents and restricted cash, end of year		
Supplemental disclosure of cash flow information:		
Cash paid for interest	$134,000	$85,000
Cash paid for income taxes	$27,000	$35,000
Supplemental disclosure of non-cash investing and financing activities:		
Accrued dividends	$500,000	$250,000

See accompanying notes to the consolidated financial statements.

ASTEA INTERNATIONAL INC. AND SUBSIDIARIES
NOTES TO THE CONSOLIDATED FINANCIAL STATEMENTS

1. Company Background

Astea International Inc. and Subsidiaries (collectively the "Company" or "Astea") are a global provider of service management software that addresses the unique needs of companies who manage capital equipment, mission critical assets and human capital. Clients include Fortune 500 to mid-size companies, which Astea services through Company facilities in the United States, United Kingdom, Australia, Japan, the Netherlands and Israel. The Company's principal products are Astea Alliance, FX Service Center and FX Mobile. Astea Alliance supports the complete service lifecycle, from lead generation and project quotation to service and billing through asset retirement. FX Service Center is a service management and dispatch solution system that gives organizations command over their field service operations. FX Mobile offerings include mobile field service automation (FSA) systems, which include the wireless devices and support of mobile field technicians using portable, hand-held computing devices. Astea Alliance is also offered as a cloud solution. By leveraging the cloud delivery model, companies can access a solution that has robust and proven functionality at a lower, more predictable cost, with seamless upgrades and a quicker return on investment. Since its inception in 1979, Astea has licensed applications to companies in a wide range of sectors including information technology, telecommunications, instruments and controls, business systems, and medical devices. The Company's sales and marketing efforts are primarily focused on new software licensing (on premise and cloud solutions) and support services for its latest generation of Astea Alliance and FieldCentrix products.

Cash, cash equivalents and restricted cash

In November 2016, the Financial Accounting Standards Board issued guidance to reduce diversity in practice that exists in the classification and presentation of changes in restricted cash on the statement of cash flows. The guidance requires that amounts generally described as restricted cash and restricted cash equivalents to be included with cash and cash equivalents when reconciling the beginning of period and end of period total amounts shown on the statement of cash flows. The Company early adopted this guidance as of January 1, 2017, on a retrospective basis, and all periods are presented under this guidance. The adoption of this new guidance resulted in the inclusion of $77,000 and $69,000, respectively in December 31, 2017 and December 31, 2016 in restricted cash in the cash and cash equivalents balance in its consolidated statements of cash flows.

The following table provides a reconciliation of cash, cash equivalents, and restricted cash reported within the consolidated balance sheet that sum to the total of the same such amounts shown on the consolidated cash flows:

	December 31, 2017	December 31, 2016
Cash and cash equivalents	$1,924,000	$661,000
Restricted cash	77,000	69,000
Total cash, cash equivalents, and restricted cash reported on the consolidated cash flows	$2,001,000	$730,000

Amounts included in restricted cash represent funds required to be set aside by a contractual agreement with the building leasing companies in Europe. The restrictions will lapse when the building lease expires.

Operating Matters and Liquidity

The Company has a history of net losses and an accumulated deficit of $35,338,000 as of December 31, 2017. In 2017, the Company generated a net income of $99,000 compared to net income of $410,000 generated in 2016. Further, at December 31, 2017, the Company had a working capital ratio of .58:1, with cash and cash equivalents of $1,924,000 compared to December 31, 2016 when the Company had cash and cash equivalents of $661,000. The increase in cash and cash equivalents in the year ended December 31, 2017 was primarily driven by an increase in cash provided by operations in 2017 compared to 2016 and a decrease in capitalized software development costs, partially offset by increased cash outlays for the Company's line of credit.

As of December 31, 2017, the Company owed $2,305,000 against the line of credit from Western Alliance Bank ("WAB"). As of December 31, 2017, the availability under the line of credit was $95,000. In April 2017, the Company extended its Revolving Loan Agreement and associated Revolving Promissory Note with its Chief Executive Officer/Director. The loan provides an unsecured $1,000,000 revolving line of credit to the Company. The proceeds of the borrowings, if needed, will be used by the Company for operating activities. If an extension of the line of credit is appropriate and agreed to by the Chief Executive Officer/Director, the Company will then obtain the necessary approvals from WAB. As of December 31, 2017, there are no amounts outstanding with the Chief Executive Officer/Director. In addition, the Company has a term loan with WAB for $400,000 through April 2018. As of December 31, 2017 the Company owed $225,000 against the term loan. The Company has projected revenues that management believes will provide sufficient funds along with available borrowings under its lines of credit to sustain its continuing operations through at least March 31, 2019.

The Company was in compliance with the WAB financial and liquidity covenant as of December 31, 2017 and expects to be able to continue to comply with the required covenants under the modified agreement with WAB for at least the next year. As a result, the amounts due to WAB under the line of credit and term loan as of December 31, 2017 were classified in the accompanying consolidated balance sheet in accordance with the repayment terms stipulated in the agreement with WAB. In the event the Company does not meet the required covenants after December 31, 2017 and WAB does not grant a waiver or forbearance agreement, and the Company believes that it does not have adequate liquidity to operate, if necessary, the Company will implement a cost cutting plan that reduces its expenditures to the appropriate level that matches its operating cash flows.

Our primary cash requirements are to fund operations which mainly include personnel-related costs, marketing costs, third party costs related to hosting and software, general and administrative costs associated with being a public company, travel costs, and quarterly preferred stock dividends. The Company expects to continue to incur operating expenses for research and development and investment in software development costs to achieve its projected revenue growth. We continually evaluate our operating cash flows which can vary subject to the actual timing of expected new sales compared to our expectations of those sales and are sensitive to many factors, including changes in working capital and our results of operations. However, projections of future cash needs and cash flows are subject to risks and uncertainty.

Management's current operating plan is to maintain and/or reduce operating expenses in order to be aligned with expected revenues. The primary area of focus will continue to be headcount and costs from outside consultants. The Company remains focused on maximizing revenue from its revenue generating resources and will continue to repurpose, if necessary, certain personnel to become billable so the Company can continue to improve its liquidity. The Company has a substantial professional services backlog that resulted from new customers added in 2017 as well as upgrade projects from our existing customers as they move to the latest version of Astea Alliance. In 2017, the Company implemented steps to reduce total operating expenses in order to maintain our liquidity. Management has implemented new marketing initiatives in 2018 that we believe will directly contribute to increasing new business that is essential to our growth. We expect our revenues will generate sufficient cash from operations through at least March 31, 2019. As noted above, if the Company's actual results fall short of expectations, the Company will make cost adjustments to improve the Company's operating cash flows. In addition, we do not expect to increase capital expenditures. We plan to maintain the same level of investment in software development.

Our operations are subject to certain risks and uncertainties including, among others, current and potential competitors with greater resources, dependence on our significant and existing customer base, closing license and subscription sales in a timely manner, lack of a history of consistently generating net income and uncertainty of future profitability, and possible fluctuations in financial results.

2. Summary of Significant Accounting Policies

Principles of Consolidation

The consolidated financial statements include the accounts of Astea International Inc. and its wholly owned subsidiaries and branches. All significant intercompany accounts and transactions have been eliminated upon consolidation.

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates. Significant assets and liabilities that are subject to estimates include allowances for doubtful accounts, the carrying amount of goodwill and other acquired intangible assets, valuation of deferred tax assets and certain accrued liabilities and share-based awards.

Revenue Recognition

Astea's revenue is principally recognized from three sources: (i) licensing arrangements, (ii) subscription services and (iii) services and maintenance.

The Company markets its products primarily through its direct sales force and resellers. License agreements do not provide for a right of return, and historically, product returns have not been significant.

The Company recognizes revenue from license sales when all of the following criteria are met: persuasive evidence of an arrangement exists, delivery has occurred, the license fee is fixed and determinable and the collection of the fee is probable. The Company utilizes written contracts as a means to establish the terms and conditions by which its product support and services are sold to customers. Delivery is considered to have occurred when title and risk of loss have been transferred to the customer, which generally occurs after a license key has been delivered electronically to the customer. Revenue for arrangements with extended payment terms in excess of one year is recognized when the payments become due, provided all other recognition criteria are satisfied. If collectability is not considered probable, revenue is recognized when the fee is collected. The Company's typical end user license agreements do not contain acceptance clauses. However, if acceptance criteria are required, revenues are deferred until customer acceptance has occurred.

If these criteria are not met, then revenue is deferred until such criteria are met or until the period(s) over which the last undelivered element is delivered. If there is objective and reliable evidence of fair value for all units of accounting in an arrangement, the arrangement consideration is allocated to the separate units of accounting based on each unit's relative fair value. There may be cases, however, in which there is objective and reliable evidence of fair value of the undelivered item(s) but no such evidence for the delivered item(s). In those cases, the residual method is used to allocate the arrangement consideration. Under the residual method, the amount of consideration allocated to the delivered item(s) equals the total arrangement consideration less the aggregate fair value of the undelivered item(s). The Company applies the revenue recognition policies discussed below to each separate unit of accounting.

Astea allocates revenue to each element in a multiple-element arrangement based on the elements' respective fair value, determined by the price charged when the element is sold separately. Specifically, Astea determines the fair value of the maintenance portion of the arrangement based on the price, at the date of sale, if sold separately, which is generally a fixed percentage of the software license selling price. The professional services portion of the arrangement is based on hourly rates which the Company charges for those services when sold separately from software. If evidence of fair value of all undelivered elements exists, but evidence does not exist for one or more delivered elements, then revenue is recognized using the residual method. If an undelivered element for which evidence of fair value does not exist, all revenue in an arrangement is deferred until the undelivered element is delivered or fair value can be determined. Under the residual method, the fair value of the undelivered elements is deferred and the remaining portion of the arrangement fee is recognized as revenue. The proportion of the revenue recognized upon delivery can vary from quarter-to-quarter depending upon the determination of vendor-specific objective evidence ("VSOE") of fair value of undelivered elements. The residual value, after allocation of the fee to the undelivered elements based on VSOE of fair value, is then allocated to the perpetual software license for the software products being sold.

When appropriate, the Company may allocate a portion of its software revenue to post-contract support activities or to other services or products provided to the customer free of charge or at non-standard rates when provided in conjunction with the licensing arrangement. Amounts allocated are based upon standard prices charged for those services or products which, in the Company's opinion, approximate fair value. Software license fees for resellers or other members of the indirect sales channel are based on a fixed percentage of the Company's standard prices. The Company recognizes software license revenue for such contracts based upon the terms and conditions provided by the reseller to its customer. The Company regularly communicates with its resellers and recognizes revenue based on information from its resellers regarding possible returns and collectability. However, the Company does not have a history of returns from the resellers.

In subscription based arrangements, even though customers use the software element, they generally do not have a contractual right to take possession of the software at any time during the hosting period without significant penalty to either run the software on its own hardware or contract with an unrelated third party to host the software. Accordingly, software as a service (SaaS) arrangements, including the software license fees within the arrangements, are accounted for as subscription services provided all other revenue recognition criteria have been met. The revenue is recognized on a straight-line basis over the lifetime of the contract. A SaaS contract is generally 1 to 3 years in duration. In accordance with generally accepted accounting principles, the Company may not recognize any SaaS revenue before the services go live, to ensure that the revenue will match the use of services. The implementation period is typically between 8 and 10 months. When upfront implementation, consulting and training services are bundled with the subscription based arrangement, the services are recognized over the remaining life of the initial contract, once the project goes live.

The post-contract support on perpetual licenses provides for technical support and unspecified updates to the Company's software products. Post-contract support is charged separately for renewals of annual maintenance in subsequent years. Fair value for maintenance is based upon either renewal rates stated in the contracts or separate sales of renewals to customers. Revenue is recognized ratably, or monthly, over the term of the maintenance period, which is typically one year.

Consulting revenue and training service revenue are generally unbundled and recognized at the time the services are performed, except as noted above, when these services are bundled with subscription revenues. If the Company enters into a fixed-price arrangement for services, the revenue is recognized using the proportional performance method based on direct labor hours incurred to date as a percentage of total estimated direct labor hours required to complete the project. Fees from licenses sold together with consulting services are generally recognized upon shipment, provided that the contract has been executed, delivery of the software has occurred, fees are fixed and determinable and collection is probable. The Company offers a variety of consulting services that include project management, implementation, data conversion, integration, custom report writing and training. Our professional services are generally billed on a time and materials basis using hourly rates together with reimbursement for travel and accommodation expenses. We recognize revenue as these professional services are performed. On rare occasions these consulting service arrangements involve acceptance criteria. In these cases, revenue is recognized upon acceptance.

We present taxes assessed by a governmental authority including sales, use, value added and excise taxes on a net basis. Therefore, the presentation of these taxes is excluded from our revenues and is included in accrued expenses in the accompanying consolidated balance sheets until such amounts are remitted to the taxing authority.

Reimbursable Expenses

The Company charges customers for out-of-pocket expenses incurred by its employees during the performance of professional services in the normal course of business. Billings for out-of-pocket expenses that are reimbursed by the customer are included in revenues with the corresponding expense included in cost of services and maintenance. During the years ended December 31, 2017 and 2016, the Company billed $463,000 and $449,000, respectively, of reimbursable expenses to customers.

Allowance for Doubtful Accounts

The Company records an allowance for doubtful accounts based on specifically identified amounts that management believes to be uncollectible. The Company also records an additional allowance based on certain percentages of aged accounts receivables, which are determined based on historical experience and management's assessment of the general financial conditions affecting the Company's customer base. Once management determines that an account will not be collected, the account is written off against the allowance for doubtful accounts. If actual collections experience changes, revisions to the allowance may be required.

Activity in the allowance for doubtful accounts is as follows:

Year Ended December 31	Balance at beginning of year	Reductions	Bad Debt Expense	Balance at end of year
2017	$ 66,000	$ -	$ 173,000	$ 239,000
2016	$ 68,000	$ (2,000)	$ -	$ 66,000

The Company reviews accounts receivable on a monthly basis to determine if any accounts receivables will potentially be uncollectible. The Company's bad debt expense increased due to a receivable balance deemed to be uncollectible as of December 31, 2017. Based on a review and the increase in the allowance for doubtful accounts at

December 31, 2017, the Company believes its allowance for doubtful accounts as of December 31, 2017 and 2016 is adequate.

Property and Equipment

Property and equipment are recorded at cost. Depreciation and amortization are provided using the straight-line method over the estimated useful lives of the related assets or the lease term, whichever is shorter. When property and equipment are sold or otherwise disposed of, the fixed asset account and related accumulated depreciation account are relieved and any gain or loss is included in operations. Expenditures for repairs and maintenance are charged to expense as incurred and significant renewals and betterments are capitalized.

Capitalized Software Development Costs

The Company capitalizes software development costs incurred during the period from the establishment of technological feasibility through the product's availability for general release. Costs incurred prior to the establishment of technological feasibility are charged to product development expense. Product development expense includes payroll, employee benefits, allocation of indirect costs such as rent, other headcount-related costs associated with product development and any related costs to third parties under sub-contracting or net of any collaborative arrangements.

Software development costs are amortized on a product-by-product basis over the greater of the ratio of current revenues to total anticipated revenues (current and future revenues) or on a straight-line basis over the estimated useful lives of the products beginning with the initial release to customers. The Company's estimated life for its capitalized software products is two years based on current sales trends and the rate of product release. The Company continually evaluates whether events or circumstances had occurred that indicate that the remaining useful life of the capitalized software development costs should be revised or that the remaining balance of such assets may not be recoverable. The Company evaluates the recoverability of capitalized software based on the net realizable value of each product, which includes the estimated future gross revenues from that product reduced by the estimated future costs of completing and disposing of that product, including the costs of performing maintenance and customer support required to satisfy the Company's responsibility set forth at the time of sale. As of December 31, 2017 and 2016, management believes that no revisions to the remaining useful lives or write-downs of capitalized software development costs were required.

Research and Development Costs

The Company reports research and development costs as Product Development expense in its consolidated statement of operations. These costs include the costs incurred prior to the establishment of technological feasibility for new product development. In addition, research and development costs also include costs related to improving the quality of the Company's released software products and any costs incurred by third party companies that may be engaged from time to time, to assist the Company in its product development efforts that are not considered to be significant enhancements to the software products.

Concentration of Credit Risk

Financial instruments, which potentially subject the Company to credit risk, consist of cash equivalents and accounts receivable. The Company's policy is to limit the amount of credit exposure to any one financial institution. The Company places cash and cash equivalents with financial institutions evaluated as being creditworthy, or investing in short-term money market which are exposed to minimal interest rate and credit risk. Cash balances are maintained with several banks. Certain operating accounts may exceed the Federal Deposit Insurance Corporation limits.

The Company sells its products to customers involved in a variety of industries including information technology, medical devices and diagnostic systems, industrial controls and instrumentation and retail systems throughout the world. While the Company does not require collateral from its customers, it does perform continuing credit evaluations of its customers' financial condition.

Income Taxes

Deferred tax assets and liabilities are determined based on differences between financial reporting and tax bases of assets and liabilities and operating loss and tax credit carryforwards and are measured using the enacted tax rates and laws that will be in effect when the difference and carryforwards are expected to be recovered or settled. A valuation allowance for deferred tax assets is provided when we estimate that it is more likely than not that all or a portion of the deferred tax assets may not be realized through future operations. This assessment is based upon consideration of available positive and negative evidence which included, among other things, our most recent results of operations and expected future profitability. We consider our actual historical results to have a stronger weight than other more subjective indicators when considering whether to establish or reduce a valuation allowance on deferred tax assets.

The Company prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. Estimated interest is recorded as a component of interest expense and penalties are recorded as a component of general and administrative expenses.

Advertising

Advertising costs are expensed when incurred. Advertising costs for the years ended December 31, 2017 and 2016 were $325,000 and $282,000, respectively, and are included in sales and marketing expenses.

Currency Translation

The international subsidiaries and foreign branch operations translate their assets and liabilities from international operations by using the exchange rate in effect at the balance sheet date. The results of operations are translated at average exchange rates during the period. The effects of exchange rate fluctuations in translating assets and liabilities of international operations into U.S. dollars are accumulated and reflected as a currency translation adjustment as a component of other comprehensive loss in the accompanying consolidated statements of changes in stockholders' deficit. Foreign exchange transaction gains and losses are included in general and administrative expenses in the consolidated statements of operations. General and administrative expenses include exchange losses of $28,000 and gains of $123,000 for the years ended December 31, 2017 and 2016, respectively.

Loss Per Share

Loss per share is computed on the basis of the weighted average number of shares and common stock equivalents outstanding during the period. In the calculation of diluted earnings per share, shares outstanding are adjusted to assume conversion of the Company's non-interest bearing convertible stock and exercise of options as if they were dilutive. In the calculation of basic loss per share, weighted average numbers of shares outstanding are used as the denominator.

The Company had net loss allocable to the common stockholders for the years ended December 31, 2017 and 2016. All options outstanding at December 31, 2017 and 2016 to purchase shares of common stock and shares of common stock issued on the assumed conversion of the eligible preferred stock were excluded from the diluted loss per common share calculation as the inclusion of these options and shares would have been antidilutive.

Years ended December 31,	2017	2016
Net income	$99,000	$410,000
Preferred dividend	500,000	500,000
Net loss available to common shareholders	(401,000)	(90,000)
Basic and diluted weighted average number of common shares outstanding	3,594,000	3,588,000
Basic and diluted loss per common share	$(0.11)	$(0.03)

Comprehensive Income (Loss)

Comprehensive income (loss) consists of net income (loss), foreign currency translation adjustments and unrealized losses on investments available for sale. The effects are presented in the accompanying consolidated statements of comprehensive income (loss).

Stock Compensation

The Company estimates the fair value of stock options granted using the Black-Scholes option-pricing model and amortizes the estimated option value using an accelerated amortization method where each option grant is split into tranches based on vesting periods. The Company's expected term represents the period that the Company's share-based awards are expected to be outstanding and was determined based on historical experience regarding similar awards, giving consideration to the contractual terms of the share-based awards and employee termination data. Executive level employees who hold a majority of options outstanding, and non-executive level employees each have similar historical option exercise and termination behavior and thus were grouped for valuation purposes. The Company's expected volatility is based on the historical volatility of its traded common stock and places exclusive reliance on historical volatilities to estimate our stock volatility over the expected term of its awards. The Company has historically not paid common stock dividends. The risk-free interest rate is based on the yield from the U.S. Treasury zero-coupon bonds with an equivalent term.

Under the Company's stock option plans, option awards generally vest over a four-year period of continuous service and have a 10-year contractual term. The fair value of each option is amortized using an accelerated amortization method over the option's vesting period. The fair value of each option is estimated on the date of the grant using the Black-Scholes option pricing model using the following assumptions:

	For the year ended December 31, 2017 Weighted Average		For the year ended December 31, 2016 Weighted Average	
Risk-free interest rate	1.96	%	1.43	%
Expected life (in years)	4.98		5.71	
Volatility	77.26	%	84.86	%
Expected dividends	-		-	
Annual forfeiture rate	20.98	%	20.12	%

The weighted-average fair value of options granted during the years ended December 31, 2017 and 2016 was estimated as $1.17 and $1.33, respectively.

New Accounting Pronouncements

In May 2014, as part of its ongoing efforts to assist in the convergence of U.S. GAAP and International Financial Reporting Standards, the Financial Accounting Standards Board (FASB) issued a new standard related to revenue recognition. Under the new standard, recognition of revenue occurs when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the entity expects to receive in exchange for those goods or services. The standard requires disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers. Additionally, under the new guidance, expenses incurred, will be deferred as an asset and will be amortized over the period that services or goods are transferred to the customer. Hence, the new guidance will result in the Company reporting deferred costs (asset) on our consolidated balance sheet. The new standard will be effective for the Company beginning January 1, 2018 at which point we plan to adopt the standard using the "modified retrospective method." Under that method, we will apply the rules to all contracts existing as of January 1, 2018, recognizing in beginning retained earnings an adjustment for the cumulative effect of the change and providing additional disclosures comparing results to previous accounting standards. We believe our notes to the consolidated financial statements related to revenue recognition will be expanded as noted below.

The Company's implementation team has continued to make progress in its project plan, which includes evaluating customer contracts across the organization, implementing changes to its accounting system to allow the Company to track revenue and cost by customer, developing policies, processes and tools to report financial results including expanding our disclosures in the financial statements, and implementing and updating the Company's internal controls over financial reporting that will be necessary under the new standard. The Company has designed specific controls related to revenue recognition under the new guidance that were implemented beginning in January 2018. The next step is to identify any differences that would result from applying the new requirements and controls of the new standard to its perpetual and subscription sales contracts. Although the Company is continuing to review certain aspects of its policies and practices, the Company's analysis of its perpetual contracts under the new standard supports the recognition of its license fee revenue at the time the license is shipped, consistent with its current revenue policy.

As noted above, the FASB issued guidance on revenue from contracts that supersedes upon adoption previous revenue recognition guidance, including industry-specific guidance. The underlying principle requires the Company to recognize revenue for the transfer of goods or services to customers at an amount that the Company expects to be entitled to in exchange for those goods or services. The guidance provides a five-step analysis of transactions to determine when and how revenue is recognized. Other major provisions include the deferral of certain contract costs, consideration of time value of money in the transaction price, and in certain situations, allowing estimates of variable consideration to be recognized before contingencies are resolved. The Company will also be required to enhance disclosures regarding the nature, timing and uncertainty of revenue and cash flows arising from the Company's contracts with its customers.

The Company performed an analysis impact for revenue recognition under the new guidance, we completed the evaluation on the largest perpetual license sales in 2017 and other license deals in the prior years with potential additional performance obligations. It was determined after review of the contracts that there would be no impact on revenue recognized or any new performance obligaions identified for these customers as it relates to the new guidance.

The Company has completed its evaluation of the new standard and has assessed the impacts of adoption on the consolidated financial statements and disclosures. Based on the evaluation of our current contracts and revenue streams, revenue recognition is mostly consistent under both the previous and new standard as noted above, with the exception of subscription costs, which are described below. Upon adoption, the Company will continue to recognize subscription revenue once a customer goes-live ratably over the remaining contract period. This contract period is typically 1 to 3 years. The average customer takes about 8 to 10 months to go live.

The previous accounting policy for costs incurred to implement a hosting customer was to report those costs in the period incurred. Upon adoption of the new standard, implementation costs will be deferred on the balance sheet and subsequently expensed ratably over the remaining contract period, once the customers go-live. The expense will be recognized with the revenue ratably over the remaining life of the contract. As a result of this change, the deferred costs (asset) will increase approximately $536,000 effective January 1, 2018. These deferred costs will then be expensed in future consolidated statements of operations over the remaining life of the subscription contract, commencing once the customer's hosted system goes live. The aforementioned change in classification on the consolidated financial statements is expected to have an immaterial minor impact on our future gross profit and net income. While we are substantially complete with the process of quantifying the impacts that will result from applying the new guidance, our assessment will be finalized during the first quarter of 2018.

The disclosure in our notes to the consolidated financial statements related to revenue recognition will be expanded under the new standard, specifically around the quantitative and qualitative information about performance obligations, changes in assets and revenue recognition as it relates to the five-step analysis.

In February 2016, the FASB issued guidance for accounting for leases. The guidance requires lessees to recognize assets and liabilities related to long-term leases on the balance sheet and expands disclosure requirements regarding leasing arrangements. The guidance is effective for reporting periods beginning after December 15, 2018 and early adoption is permitted. The guidance must be adopted on a modified retrospective basis and provides for certain practical expedients. The Company expects to adopt this guidance in the first quarter of 2019 and we currently expect that the adoption of this guidance will likely change the way we account for our operating leases and will likely result in recording the future benefits of those leases as an asset and the related minimum lease payments as a liability on our consolidated balance sheets. The Company has not yet begun to quantify the specific impacts of this guidance.

In January 2018, the FASB released guidance on the accounting for tax on the global intangible low-taxed income ("GILTI") provisions of the Tax Cuts and Jobs Act (the "Act"). The GILTI provisions impose a tax on foreign income in excess of a deemed return on tangible assets of foreign corporations. The guidance indicates that either accounting for deferred taxes related to GILTI inclusions or to treat any taxes on GILTI inclusions as period cost are both acceptable methods subject to an accounting policy election. Effective the first quarter of 2018, the Company will elect to treat any potential GILTI inclusions as a period cost as we are not projecting any material impact from GILTI inclusions and any deferred taxes related to any inclusion would be immaterial.

3. Accounts Receivable

Billed accounts receivable represent billings for the Company's products and services to end users and value added resellers. Unbilled accounts receivable represents contractual amounts due within one year under software licenses that have been delivered or statements of work for professional services, for work performed but not yet invoiced. Billed accounts receivable
are shown net of reserves for estimated uncollectible amounts. Accounts receivable, net of allowance for doubtful accounts, consist of the following:

	December 31,	
	2017	2016
Billed accounts receivable, net	$5,815,000	$5,330,000
Unbilled accounts receivable	774,000	266,000
	$6,589,000	$5,596,000

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4. Property and Equipment

Property and equipment consist of:

	Useful Life (Years)	December 31, 2017	2016
Computers and related equipment	3	$ 4,564,000	$ 4,524,000
Furniture and fixtures	10	606,000	606,000
Leasehold improvements	The lesser of lease term or 10	477,000	476,000
Software	3	1,089,000	1,083,000
Office equipment	3-7	813,000	813,000
		7,549,000	7,502,000
Less: Accumulated depreciation and amortization		(7,444,000)	(7,371,000)
		$ 105,000	$ 131,000

Depreciation and amortization expense for the years ended December 31, 2017 and 2016 was $73,000 and $103,000, respectively.

5. Capitalized Software Development Costs

Capitalized software development costs consist of:

	Remaining Weighted Average Life	December 31, 2017	2016
Capitalized software development costs	19.9 months	$31,861,000	$29,228,000
Less: Accumulated amortization		(27,788,000)	(25,207,000)
		$4,073,000	$4,021,000

The Company capitalized software development costs of $2,633,000 and $2,939,000 for the years ended December 31, 2017 and 2016, respectively. Amortization of capitalized software development costs for the years ended December 31, 2017 and 2016 was $2,581,000 and $2,299,000, respectively, and is reflected in cost of software license fees in the consolidated statements of operations. The Company amortizes software developments costs using the greater of the straight-line basis over the estimated useful lives of the product (two years) or the revenue forecast method.

6. Accounts Payable and Accrued Expenses

Accounts payable and accrued expenses consist of:

December 31,	2017	2016
Accounts payable	$839,000	$641,000
Accrued compensation and related benefits	1,788,000	1,402,000
Sales and payroll taxes	605,000	452,000

Preferred dividends	500,000	250,000
Income tax payable	123,000	97,000
Third party software costs	57,000	-
Accrued professional services	58,000	41,000
Accrued interest expense	-	9,000
Other accrued liabilities	18,000	12,000
	$3,988,000	$2,904,000

7. Lines of Credit and Term Note

Line of credit and term loan with Western Alliance Bank

On August 11, 2017, the Company entered in to a Business Financing Agreement (the "Financing Agreement") with Bridge Bank, a division of WAB, which includes a revolving line of credit and a term loan. The agreement will mature on September 1, 2019.

The Financing Agreement with WAB, established a revolving credit line for the Company in the principal amount of up to $2,400,000 (the "Revolving Credit Line") and a Term Loan of $400,000 (the "Term Loan"). Availability under the Revolving Credit Line is tied to a borrowing base formula that is based on 80% of the Company's eligible domestic accounts receivable. Advances under the Revolving Credit Line (the "Advances") may be repaid and reborrowed in accordance with the Loan Agreement. Pursuant to the Financing Agreement, the Company agreed to pay to WAB the outstanding principal amount of all Advances, the unpaid interest thereon, and all other obligations incurred with respect to the Loan Agreement on September 1, 2019. Interest will be accrued and paid monthly at the Wall Street Journal Prime Rate plus 1.5%.

The original Term Loan provided $400,000 to the Company. For the first six months, the Company was required to only pay interest. For the next 18 months, the Term Loan will be amortized into monthly payments of principal and interest. The interest rate on the original Term Loan will be the Wall Street Journal Prime Rate plus 1.75%. The Term Loan was modified in December 2017, and as a result, the Company will have to repay the Term Loan over the next 5 months. The first payment of $75,000 was due on the closing of the loan modification, the second payment of $25,000 was due on December 8, 2017, the third payment of $50,000 was due on December 29, 2017, the fourth payment of $125,000 is due mid- January and the final payment of $125,000 is due in April 2018. The Company made the required payments and made an extra payment of $25,000 as of December 31, 2017. As a result, the balance of the term note was $225,000 as of December 31, 2017.

As of December 31, 2017, the Company owed $2,305,000 under the revolving line of credit. The Company incurred $96,000 of interest expense to WAB in 2017. As of December 31, 2017, the availability under the line of credit was $95,000. The Company was in compliance with the financial and liquidity covenant of the modified Loan Agreement as of December 31, 2017.

The Company expects to be able to continue to comply with required covenants under the agreement with WAB for at least the next year. As a result, the amounts due to WAB under the line of credit and term loan as of December 31, 2017 were classified in the accompanying consolidated balance sheet in accordance with the repayment terms stipulated in the agreement. In the event the Company does not meet its covenants after December 31, 2017 and WAB does not grant a waiver or forbearance agreement, and the Company believes that it does not have adequate liquidity to operate, the Company will implement a cost cutting plan that reduces its expenditures to the appropriate level that matches its operating cash flows.

Subject to certain exceptions, the modified Financing Agreement contains covenants prohibiting the Company from, among other things: (a) conveying, selling, leasing, transferring or otherwise disposing of their properties or assets; (b) liquidating or dissolving; (c) engaging in any business other than the business currently engaged in or reasonably related thereto; (d) entering into any merger or consolidation, or acquiring all or substantially all of the capital stock or property of another entity; (e) becoming liable for any indebtedness; (f) allowing any lien or encumbrance on any of their property; and (g) paying any dividends (other than dividends on outstanding convertible preferred stock); and (i) making payment on subordinated debt. Further, the Company must maintain minimum liquidity of $750,000, tested monthly, consisting of a combination of Unrestricted cash at Bridge Bank plus available U.S. accounts receivable. In addition, actual EBITDA, as defined in the Financing Agreement for the trailing 6-month period must be at least $1 as tested quarterly.

The Financing Agreement is secured by a first priority perfected security interest in substantially all of the assets of the Company, excluding the intellectual property of the Company. The Financing Agreement contains a negative covenant prohibiting the Company from granting a security interest in their intellectual property to any party.

Line of Credit Silicon Valley Bank (SVB)

At the closing of the WAB Financing Agreement, the Company repaid all outstanding amounts owed to SVB under the Revolving Facility and terminated the Revolving Facility. The Company incurred $128,000 and $113,000 of interest expense to SVB as of December 31, 2017 and 2016, respectively. In addition, the Company fully amortized $35,000 of deferred financing costs to interest expense, due to early cancellation of the Revolving Facility which was the remaining balance of deferred financing costs.

Line of Credit Chief Executive Officer/Director

In April 2017, the Company extended its Revolving Loan Agreement and associated Revolving Promissory Note with its Chief Executive Officer/Director. This loan agreement provides an unsecured $1,000,000 revolving line of credit to the Company. Amounts outstanding under the line of credit will bear interest at a rate of 7% per annum, payable monthly. The maturity date of the line of credit is May 1, 2018. The Company may pay all amounts outstanding and terminate the agreement prior to that time with no penalties. The loan agreement contains customary covenants, default provisions and other provisions. The loan agreement was negotiated by the Audit Committee of the Company's Board of Directors, and borrowings under the Line of Credit will be subject to the Audit Committee's approval. The proceeds of the borrowings, if needed, will be used by the Company for working capital and other general corporate purposes. If an extension of the line of credit is appropriate and agreed to by the Chief Executive Officer/Director, the Company will then seek to obtain the necessary approvals from WAB.

In August 2017, the Company repaid all amounts borrowed under the line of credit with its Chief Executive Officer/Director. There were no amounts outstanding as of December 31, 2017. The Company incurred $6,000 of interest expense to its Chief Executive Officer/Director for the year ended December 31, 2017. The Company was in compliance with the covenants of the loan agreement as of December 31, 2017.

8. Income Taxes

Pre-tax (loss) income for domestic locations for the years ended December 31, 2017 and 2016 was ($610,000) and 957,000, respectively. Foreign locations had pre-tax (loss) income of $408,000 and ($510,000) in 2017 and 2016, respectively.

The (benefit) provision for income taxes is as follows:

Years ended December 31,	2017	2016
Current:		
Federal	$(354,000)	$-
State	-	-
Foreign	45,000	25,000
	(309,000)	25,000
Deferred:		
Federal	$-	$-
State	-	-
Foreign	8,000	12,000
	$(301,000)	$37,000

The effective tax rate differed from the statutory U.S. federal income tax rate as follows:

	Year ended December 31, 2017	2016
Statutory tax rate	(34.0 %)	34.0 %
Effect of tax reform	1,964.8 %	- %
Permanent differences	29.7 %	6.7 %
Difference between statutory and foreign rates	(91.4 %)	(10.5 %)
Other	(107.5 %)	10.7 %
Valuation allowance	(1,910.6 %)	(32.6 %)

(149.0 %)	8.3 %

Deferred tax assets and liabilities represent the future tax consequences of the differences between the financial statement carrying amounts for assets and liabilities versus the tax bases of assets and liabilities. Under this method, deferred tax assets are recognized for deductible temporary differences, operating loss and tax credit carryforwards. Deferred liabilities are recognized for taxable temporary differences. Deferred tax assets are reduced by a valuation allowance when, in the opinion of management, it is more likely than not that some portion or all of the deferred tax assets will not be realized. The impact of tax rate changes on deferred tax assets and liabilities is recognized in the year that the change is enacted.

The approximate income tax effect of each type of temporary difference is as follows:

December 31,	2017	2016
Deferred tax assets:		
Timing of revenue recognition	$1,000,000	1,382,000
Accruals and reserves not currently deductible for tax	248,000	70,000
Domestic net operating loss carryforwards	8,485,000	12,520,000
Foreign net operating loss carryforwards	3,559,000	3,541,000
Depreciation and amortization	69,000	159,000
Alternative minimum tax	-	361,000
Non-qualified stock options	230,000	300,000
Amortization of deductible goodwill	83,000	157,000
Other	20,000	28,000
Total deferred tax assets	13,694,000	18,518,000
Deferred tax liabilities:		
Capitalized software development costs	(1,061,000)	(1,498,000)
Israel deferred tax liability	(49,000)	(41,000)
Total deferred tax liabilities	(1,110,000)	(1,539,000)
Net deferred tax asset before valuation allowance	12,584,000	16,979,000
Valuation allowance	(12,633,000)	(17,020,000)
Net deferred tax liabilities	$(49,000)	(41,000)

Realization of deferred tax assets is primarily dependent on future taxable income, the amount and timing of which is uncertain. The valuation allowance is adjusted on a periodic basis to reflect management's estimate of the realizable value of the net deferred tax assets. A valuation allowance has been recorded for the net deferred tax asset for all jurisdictions with the exception of a $49,000 deferred tax liability recorded for the Company's subsidiary located in Israel.

Taxable income for the Israeli subsidiary was $595,000 and $412,000 for the years ended December 31, 2017 and 2016, respectively. The Israeli subsidiary has a tax provision of $53,000 and $37,000 for the years ended December 31, 2017 and 2016, respectively.

As of December 31, 2017, the Company had net operating loss carryforwards for United States federal income tax purposes of approximately $29,458,000. The net operating loss carryforwards expire between 2019 through 2035. The extent to which the loss carryforward can be used to offset future taxable income and tax liabilities, respectively, may be limited, depending on the extent of ownership changes within any three-year period.

The Company has identified its federal tax return and its state returns in Pennsylvania and California as "major" tax jurisdictions. Based on the Company's evaluation, it concluded that there are no significant uncertain tax positions requiring recognition in the Company's financial statements. The Company's evaluation was performed for tax years ended 2014 through 2017, the only periods subject to examination. The Company believes that its income tax positions and deductions will be sustained on a tax authority audit and does not anticipate any adjustments that will result in a material change to its financial position.

The Company's policy for recording interest and penalties associated with audits is to record such items as a component of income before income taxes. Penalties are recorded in general and administrative expenses and interest paid or received is recorded in interest expense or interest income, respectively, in the consolidated statement of operations. For the years ended December 31, 2017 and 2016, there were no interest or penalties related to uncertain tax positions.

On December 22, 2017, the Tax Cuts and Jobs Act of 2017 (the "Act") was signed into law making significant changes to the Internal Revenue Code. Changes include, but are not limited to, a federal corporate tax rate decrease from 35% to 21% for tax years beginning after December 31, 2017, the transition of U.S international taxation from a worldwide tax system to a territorial system, and a one-time transition tax on the mandatory deemed repatriation of foreign earnings. The Act repeals the Alternative Minimum Tax ("AMT") for years beginning after December 31, 2017 and allows Companies with existing AMT credit carryforwards to receive future refunds of the credit. As a result, the Company has recorded an AMT credit benefit of $362,000 and recorded a corresponding long term receivable as of December 31, 2017. The Company believes that the most significant impact on its consolidated financial statements will be a reduction of approximately $3,900,000 for the deferred tax assets related to net operating losses and other assets. Such reduction is offset by changes to the Company's valuation allowance. Additionally, the Company has investments in various foreign subsidiaries for which at December 31, 2017 and November 2, 2017, the cumulative earnings and profits of these entities was estimated to be negative. Accordingly, the Company has not recorded a provisional amount for the transition tax enacted under the Act.

On December 22, 2017, the Securities and Exchange Commission issued Staff Accounting Bulletin 118, which allows a measurement period, not to exceed one year, to finalize the accounting for the income tax impacts of the Tax Act. Until the accounting for the income tax impacts of the Tax Act is complete, the reported amounts are based on reasonable estimates, are disclosed as provisional and reflect any adjustments in subsequent periods as they refine their estimates or complete their accounting of such tax effects.

9. Commitments and Contingencies

Leases

The Company leases facilities and equipment under non-cancelable operating leases which may include escalation clauses. Rent expense for facility leases for the years ended December 31, 2017 and 2016 was $922,000 and $1,006,000, respectively. Equipment and vehicle lease expense for the years ended December 31, 2017 and 2016 was $131,000 and $115,000, respectively.

Future minimum lease payments under the Company's operating leases as of December 31, 2017 are as follows:

2018	$1,040,000
2019	990,000
2020	820,000
2021	733,000
2022	451,000
thereafter	1,000

Litigation

From time to time, the Company may be involved in certain legal actions and customer disputes arising in the ordinary course of business. In the Company's opinion, the outcome of such actions will not have a material adverse effect on the Company's financial position, results of operations or cash flows.

10. Profit Sharing Plan/Savings Plan

The Company maintains a discretionary profit sharing plan, including a voluntary Section 401(k) feature, covering all qualified and eligible employees. Company contributions to the profit sharing plan are determined at the discretion of the Board of Directors. The Company may match 25% of eligible employees' contributions to the 401(k) plan up to a maximum of 1.5% of each employee's compensation. It was determined by the Board of Directors that there would be a match in 2017 and 2016. The Company elected to match 25% of 6.0% of compensation for each eligible employee's contributions to the 401(k) plans in 2017 and 2016 for a total match of $78,000 and $88,000, respectively.

11. Equity Plans

Share-Based Awards

Compensation costs in 2017 and 2016 include compensation costs for share-based payments granted to employees and directors based on the estimated grant date fair value.

As of December 31, 2017, the total unrecognized compensation cost related to non-vested options amounted to $168,000, which is expected to be recognized over the options' weighted average remaining vesting period of 2.45 years.

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The Company has Stock Option Plans (the "Plans") under which incentive and non-qualified stock options may be granted to its employees, officers, directors and others. Generally, incentive stock options are granted at fair value, become exercisable over a four-year period, and are subject to the employee's continued employment. Non-qualified options are granted at exercise prices determined by the Board of Directors and vest over varying periods. A summary of the status of the Company's stock options as of December 31, 2017 and 2016 and changes during the years then ended are as follows:

	OPTIONS OUTSTANDING		OPTIONS EXERCISABLE	
	Shares	Wtd. Avg. Exercise Price Per Share	Shares	Wtd. Avg. Exercise Price Per Share
Balance, December 31, 2015	738,000	$ 3.06	486,000	$ 3.59
Granted	115,000	1.91		
Forfeited	(66,000)	2.11		
Exercised	(7,000)	1.26		
Expired	(70,000)	5.44		
Balance, December 31, 2016	710,000	$ 2.73	485,000	$ 3.12
Granted	135,000	1.86		
Forfeited	(99,000)	3.23		
Expired	(43,000)	4.50		
Balance, December 31, 2017	703,000	$ 2.39	426,000	$ 2.74

There are 560,000 shares available for granting future options as of December 31, 2017. It is the Company's policy to issue shares from authorized but unissued common stock when stock options are exercised.

The following table summarizes outstanding options that are vested and expected to vest under the Company's stock option plans as of December 31, 2017:

	Number of Shares	Weighted Average Exercise Price Per Share	Weighted Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value
Outstanding Options	703,000	$2.39	5.86	$442,000
Vested and Expected to Vest	637,000	$2.44	5.57	$374,000
Options Exercisable	426,000	$2.74	4.24	$159,000

The following table shows total share-based compensation expense included in the consolidated statements of operations:

	Years Ended	
	December 31, 2017	December 31, 2016

Cost of services and maintenance	$ 21,000	$ 13,000
Sales and marketing	2,000	-
General and administrative	112,000	107,000
Stock-based compensation expense	$ 135,000	$ 120,000

Convertible Preferred Stock

Series A

On September 24, 2008, the Company issued 826,000 shares of Series-A Convertible Preferred Stock ("Series A Preferred Stock") to its Chief Executive Officer at a price of $3.63 per share for a total of $3,000,000. Dividends accrue daily on the Series A Preferred at a rate of 10% and are payable only when, and if, declared by the Company's Board of Directors, quarterly in arrears. At December 31, 2017, there were accrued dividends of $300,000.

The Series A Preferred Stock may be converted into common stock at the rate of one share of common for each share of Series A Preferred Stock. The Company has rights to cause conversion of all of the shares of Series A Preferred Stock outstanding. The Company may redeem, subject to board approval, all of the shares of Series A Preferred Stock then outstanding at a price equal to the greater of (i) 130% of the purchase price plus all accrued and unpaid dividends and (ii) the fair market value of such number of shares of common stock which the holder of the Series A Preferred Stock would be entitled to receive had the redeemed Series A Preferred Stock been converted immediately prior to the redemption. In the event of a liquidation of the Company, the holder of the Series A and (Series B) preferred stock shall be entitled to receive in preference to the holders of the common stock, the original amount invested in the preferred stock plus any unpaid and accrued dividends. Preferred stock dividends on the Series A are declared quarterly by the Board of Directors.

The Company reports the Series A Preferred Stock on the Company's consolidated balance sheet within stockholders' deficit.

Series B

On June 20, 2014, the Company issued 797,000 of Series-B Convertible Preferred Stock ("Series B Preferred Stock") to its Chief Executive Officer at a price of $2.51 per share in exchange for the cancellation of $2,000,000 of outstanding principal owed to its Chief Executive Officer under a Revolving Promissory Note dated March 26, 2014.

The Series B Preferred Stock may be converted into shares of common stock on a one-to-one ratio, subject to customary anti-dilution provisions. The Series B Preferred Stock will pay a quarterly dividend, which will accrue at an annual rate of 10%. The Company's Chief Executive Officer may convert 100% of his shares of the Series B Preferred Stock into shares of common stock. Each and every outstanding share of Series B Preferred Stock is subject to mandatory and automatic conversion into shares of common stock if the closing price of the common stock as reported by the principal exchange or quotation system on which such common stock is traded or reported exceeds 300% of the then current conversion price for 30 consecutive trading days. The Company may redeem all of the outstanding shares of the Series B Preferred Stock issued at a price per share equal to 300% of the purchase price. The Series B Preferred Stock ranks senior to the common stock and on parity with the Company's Series A Convertible Preferred Stock. In the event of a liquidation of the Company, the holder of the Series B and Series A Preferred Stock shall be entitled to receive in preference to the holders of the common stock, the original amount invested in the preferred stock plus any unpaid and accrued dividends. Preferred stock dividends on the Series B are declared quarterly by the Board of Directors. At December 31, 2017, there were accrued dividends of $200,000.

The Company reports the Series B Preferred Stock on the Company's consolidated balance sheet within stockholders' deficit.

12. Geographic Segment Data

The Company and its subsidiaries are engaged in the design, development, marketing and support of its service management software solutions. Substantially all revenues result from the license of the Company's software products and related professional services and customer support services. The Company's chief executive officer reviews financial information presented on a consolidated basis, accompanied by disaggregated information about revenues by geographic region for purposes of making operating decisions and assessing financial performance. Accordingly, the Company considers itself to have three reporting segments as follows:

Year ended December 31,	2017	2016
Revenues		
Software license fees		
United States	$1,188,000	$1,271,000
Europe	239,000	886,000
Asia/Pacific	1,106,000	542,000
Total foreign software license fees	1,345,000	1,428,000
Total software license fees	2,533,000	2,699,000
Subscriptions		
United States	1,522,000	2,721,000
Europe	787,000	1,037,000
Asia/Pacific	427,000	233,000
Total foreign subscriptions	1,214,000	1,270,000
Total subscriptions	2,736,000	3,991,000
Services and maintenance		
United States	11,292,000	12,454,000
Europe	3,580,000	3,417,000
Asia/Pacific	6,193,000	3,237,000
Total foreign services and maintenance revenue	9,773,000	6,654,000
Total services and maintenance revenue	21,065,000	19,108,000
Total revenue	$26,334,000	$25,798,000
Net income		
United States	$(262,000)	$920,000
Europe	65,000	(277,000)
Asia/Pacific	296,000	(233,000)
Net income (loss)	$99,000	$410,000
Long lived assets		
United States	$4,605,000	$4,289,000
Europe	88,000	14,000
Asia/Pacific	68,000	70,000
Total long-lived assets	$4,761,000	$4,373,000
Total assets		

United States	$9,890,000	$8,286,000
Europe	967,000	1,474,000
Asia/Pacific	2,712,000	1,174,000
Total assets	$13,569,000	$10,934,000

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13. Selected Consolidated Quarterly Financial Data (Unaudited)

2017 Quarter Ended	Dec 31,	Sep 30,	Jun 30,	Mar 31,
Revenues	$7,895,000	$6,482,000	$5,956,000	$6,001,000
Gross profit	2,811,000	2,003,000	1,559,000	1,522,000
Net income (loss)	819,000	186,000	(227,000)	(679,000)
Net income (loss) allocable to common shareholders	694,000	61,000	(352,000)	(804,000)
Basic and diluted net income (loss) per share	$0.19	$.02	$(0.10)	$(0.22)
Shares used in computing basic and diluted net income (loss) per share (in thousands)	3,594	3,594	3,594	3,594

2016 Quarter Ended	Dec 31,	Sep 30,	Jun 30,	Mar 31,
Revenues	$9,076,000	$5,688,000	$5,686,000	$5,348,000
Gross profit	4,428,000	1,937,000	1,147,000	1,347,000
Net income (loss)	2,007,000	148,000	(1,048,000)	(697,000)
Net income (loss) allocable to common shareholders	1,882,000	23,000	(1,173,000)	(822,000)
Basic and diluted net income (loss) per share	$ 0.52	$ .01	$(0.33)	$(0.23)
Shares used in computing basic and diluted net income (loss) per share (in thousands)	3,591	3,587	3,587	3,587

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure.

None

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Our management, with the participation of our principal executive officer and our principal financial officer, has evaluated, as of the end of the period covered by this Form 10-K, the design adequacy and operating the effectiveness of our disclosure controls and procedures (as defined in as required by Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")). Based on that evaluation, our principal executive officer and principal financial officer have concluded that these disclosure controls and procedures as of such date are effective at the reasonable assurance level in ensuring that information required to be disclosed by us in the reports that we file or submit under the Exchange Act, is recorded, processed, summarized and reported within the time periods specified in the Securities Exchange Commission's rules and forms. Our disclosure controls and procedures include, without limitation, controls and procedures that are designed to reasonably assure that information required to be disclosed by us in the reports we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure. There were no changes in our internal control over financial reporting during the quarter ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining an adequate system of internal control over financial reporting as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Under the supervision and with the participation of our management, including our principal executive officer and principal financial officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting, based on the framework in the Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO 2013").

Our system of internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the U.S.

Our internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance that our transactions are recorded as necessary to permit the preparation of our financial statements in accordance with accounting principles generally accepted in the U.S., and that our receipts and expenditures are being made only in accordance with authorizations of our management and our directors; and
- provide reasonable assurance regarding the prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on the financial statements.

Because of its inherent limitations, a system of internal controls over financial reporting can provide only reasonable assurance and may not prevent or detect misstatements. Further, because of changes in conditions, effectiveness of internal controls over financial reporting may vary over time. Our system contains self-monitoring mechanisms, and actions are taken to correct deficiencies as they are found.

Our management conducted an evaluation of the effectiveness of the system of internal control over financial reporting based on the framework in the 2013 Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, our management concluded that our system of internal controls over financial reporting was effective as of December 31, 2017.

This Form 10-K does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting as the rules of the Securities and Exchange Commission applicable to the Company do not require such an attestation report and permit us to provide only management's report in this Form 10-K.

Changes in Internal Controls Over Financial Reporting

There were no changes in ICFR during the quarter ended December 31, 2017 that materially affected ICFR or are reasonably likely to materially affect it.

Item 9B. Other Information.

None

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Certain information required by Part III is omitted from this Report in that the Company will file a definitive proxy statement within 120 days after the end of the Company's fiscal year pursuant to Regulation 14A (the "Proxy Statement") for its 2018 Annual Meeting of Stockholders proposed to be held on June 22, 2018, and the information therein is incorporated herein by reference.

The information in the Proxy Statement set forth under the captions "Election of Directors," "Executive Officers," "Section 16(a) Beneficial Ownership Reporting Compliance," "The Board of Directors Leadership Structure and Its Committees—Code of Conduct and Ethics," "The Board of Directors Leadership Structure and Its Committees—Nominating and Corporate Governance Committee" and "The Board of Directors Leadership Structure and Its Committees—Audit Committee" is incorporated herein by reference.

Item 11. Executive Compensation.

Executive Severance Agreements

The information in the Proxy Statement set forth under the captions "Compensation Discussion and Analysis" and "Compensation and Other Information Concerning Directors and Officers" of the Proxy Statement, is incorporated herein by reference.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information set forth under the caption "Security Ownership of Certain Beneficial Owners and Management" of the Proxy Statement is incorporated herein by reference. See "Securities Authorized for Issuance Under Equity Compensation Plans" under Part II, Item 5.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

The information required by this Item is incorporated by reference from the Proxy Statement or amendment to the Form 10-K under the captions "Certain Relationships and Related Transactions" and "The Board of Directors Leadership Structure and its Committees."

Item 14. Principal Accountant Fees and Services.

The information required by this Item is incorporated by reference from the Proxy Statement under the heading "Principal Accountant Fees and Services."

PART IV

Item 15. Exhibits and Financial Statement Schedules.

(a)(1)(A) Consolidated Financial Statements.

i) Consolidated Balance Sheets at December 31, 2017 and 2016.
ii) Consolidated Statements of Operations for the years ended December 31, 2016 and 2015.
iii) Consolidated Statement of Comprehensive Loss for the years ended December 31, 2017 and 2016.
iv) Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2017 and 2016.
v) Consolidated Statements of Cash Flows for the years ended December 31, 2017 and 2016.
vi) Notes to the Consolidated Financial Statements.

(a)(1)(B) Report of Independent Registered Public Accounting Firm.

(a)(2) Schedules.

a) Schedule II - Valuation and Qualifying Accounts

The schedule listed above has been omitted because the information required to be set forth therein is not applicable or is shown in the accompanying Financial Statements or notes thereto.

(a)(3) List of Exhibits.

The following exhibits are filed as part of and incorporated by reference into this Annual Report on Form 10-K:

Exhibit No.	Description
3.1**	Certificate of Incorporation of the Company (Incorporated herein by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-1, as amended (File No. 33-92778)).
3.2**	By-Laws of the Company (Incorporated herein by reference to Exhibit 3.2 to the Company's Registration Statement on Form S-1, as amended (File No. 33-92778)).
3.3	Certificate of Designation of Series A Convertible Preferred Stock (Incorporated herein by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed September 26, 2008).
3.4	Certificate of Designation of Series B Convertible Preferred Stock (Incorporated herein by reference to the Company's Current Report on Form 8-K filed on June 24, 2014).
4.1**	Specimen certificate representing the Common Stock (Incorporated herein by Reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1, as amended (File No. 33-92778)).
10.1#	Amended and Restated 1995 Non-Employee Director Stock Option Plan (Incorporated herein by reference to Exhibit 10.9 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997 filed on March 30, 1998).
10.2#	Form of Non-Qualified Stock Option Agreement under the 1995 Non-Employee Director Stock Option Plan (Incorporated herein by reference to Exhibit 4.5 to the Company's Registration Statement on Form S-8, filed on September 19, 1995 (File No. 33-97064)).
10.3#	1997 Stock Option Plan (Incorporated herein by reference to Exhibit 10.10 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 filed on March 31, 1997).
10.4#	Form of Non-Qualified Stock Option Agreement under the 1997 Stock Option Plan. (Incorporated herein by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 filed on March 31, 1997).
10.5#	

	Form of Incentive Stock Option Agreement under the 1997 Stock Option Plan (Incorporated herein by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K for the fiscal year ended December 31, 1996 filed on March 31, 1997).
10.6#	1998 Stock Option Plan (Incorporated herein by reference to Exhibit 10.14 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997 filed on March 30, 1998).
10.7#	Form of Non-Qualified Stock Option Agreement under the 1998 Stock Option Plan. (Incorporated herein by reference to Exhibit 10.15 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997 filed on March 30, 1998).
10.8#	Form of Incentive Stock Option Agreement under the 1998 Stock Option Plan. (Incorporated herein by reference to Exhibit 10.16 to the Company's Annual Report on Form 10-K for the year ended December 31, 1997 filed on March 30, 1998).

10.9#	2001 Stock Option Plan (Incorporated herein by reference to Exhibit B to the Company's Proxy Statement on Schedule 14A filed July 5, 2001).
10.10#	Form of Severance Agreement, dated April 14, 2008, between Astea International Inc. and certain of its officers. (Incorporated herein by reference to the Company's Annual Report on Form 10-K for the year ended December 31, 2007 filed on April 15, 2008)

Schedule of Differences

Each Severance Agreement executed with the executive officers listed below is substantially the same as the form of each other:

Officers	Title
Zack Bergreen	Chief Executive Officer
Rick Etskovitz	Chief Financial Officer and Treasurer

10.11	Preferred Stock Purchase Agreement between Astea International Inc. and Zack Bergreen, dated September 24, 2008 (Incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed September 26, 2008).
10.12#	Amended and Restated 2006 Stock Option Plan (Incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 16, 2010).
10.13#	Form of Incentive Stock Option Agreement under Amended and Restated 2006 Stock Option Plan (Incorporated herein by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed June 16, 2010).
10.14#	Form of Non-Qualified Stock Option Agreement under Amended and Restated 2006 Stock Option Plan Incorporated herein by reference to Exhibit 10.3 to the Current Report on Form 8-K filed June 16, 2010).
10.15#	Revolving Loan Agreement between Astea International Inc. and Zack Bergreen dated May 29, 2013 (Incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed June 4, 2013).
10.16#	Amendment No.1 to Revolving Loan Agreement between Astea International Inc. and Zack Bergreen dated March 26, 2014 (Incorporated herein by reference to Exhibit 10.16 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013 filed on March 31, 2014).
10.17#	Revolving Promissory Note between Astea international Inc., as borrower, and Zack Bergreen, as lender, dated March 26, 2014 (Incorporated herein by reference to Exhibit 10.17 to the Company's Annual Report on Form 10-K for the year ended December 31, 2013 filed on March 31, 2014).
10.18	Loan and Security Agreement among Astea International Inc., Network Data, Inc., Virtual Service Corporation, FC Acquisition Corp., and Silicon Valley Bank dated June 13, 2014 (Incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 16, 2014).
10.19	Preferred Stock Purchase Agreement between the Astea International Inc. and Zack Bergreen dated June 20, 2014 (Incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on June 24, 2014).
10.20	Amended and Restated Loan and Security Agreement among Astea International Inc., Network Data, Inc., Virtual Service Corporation, FC Acquisition Corp., and Silicon Valley Bank dated as of December 18, 2014 (Incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 29, 2014).
10.21	First Loan Modification Agreement by among Astea International Inc., Network Data, Inc., Virtual Service Corporation, FC Acquisition Corp. and Silicon Valley Bank dated as of January 14, 2016 (Incorporated herein by reference to Exhibit 10.1 to the Company's current Report on Form 8-K filed on January 15, 2016).
10.22#	2016 Stock Option Plan (Incorporated herein by reference to Exhibit A to the Company's Proxy Statement on Schedule 14A filed April 29, 2016).

10.23	Business Financing Agreement among Astea International Inc., Network Data, Inc. and Western Alliance Bank, dated August 11, 2017 (Incorporated herein by reference to Exhibit 10.23 to the Company's Quarterly Report on Form 10-Q filed on August 14, 2017).
10.24#	Amendment No. 4 to Revolving Loan Agreement between Astea International Inc. and Zack Bergreen dated April 26, 2017 (Incorporated herein by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 28, 2017).
21.1*	Subsidiaries of the Registrant.
23.1*	Consent of EisnerAmper LLP.
24.1*	Powers of Attorney (See the Signature Page).
31.1*	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 – Chief Executive Officer.
31.2*	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 – Chief Financial Officer.

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32.1* Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 – Chief Executive Officer.

32.2* Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 – Chief Financial Officer.

* Filed herewith.
** Paper filing.
# Management contract or compensatory plan or arrangement.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

ASTEA INTERNATIONAL INC.

By: /s/Zack Bergreen
Zack Bergreen
Chief Executive Officer

March 29, 2018

POWER OF ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Zack Bergreen and Rick Etskovitz, jointly and severally, his attorney-in-fact, each with the power of substitution, for him in any and all capacities, to sign any amendments to this Report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorney-in-fact, or his substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/Zack Bergreen Zack Bergreen	Chief Executive Officer (Principal Executive Officer) and Chairman of the Board of Directors	March 29, 2018
/s/Rick Etskovitz Rick Etskovitz	Chief Financial Officer (Principal Financial Officer and Principal Accounting Officer)	March 29, 2018
/s/Keith Schneck Keith Schneck	Director	March 29, 2018
/s/Eric Siegel Eric Siegel	Director	March 29, 2018
/s/Mark Simon Mark Simon	Director	March 29, 2018

EXHIBIT INDEX

No.	Description
21.1	Subsidiaries of the Registrant
23.1	Consent of EisnerAmper LLP
24.1	Powers of Attorney (See the Signature Page)
31.1	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002-Chief Executive Officer
31.2	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002-Chief Financial Officer
32.1	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002-Chief Executive Officer
32.2	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002-Chief Financial Officer
101.INS	XBRL Instance Document
101.SCH	XBRL Taxonomy Extension Schema
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Taxonomy Extension Presentation Linkbase