AWARE INC /MA/
Form 10-K
February 10, 2017

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

Annual Report Pursuant to Section 13 or 15(d) of The

Securities Exchange Act of 1934

For the fiscal year ended December 31, 2016

Commission file number 000-21129

AWARE, INC.
(Exact Name of Registrant as Specified in Its Charter)

Massachusetts	**04-2911026**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)

40 Middlesex Turnpike, Bedford, Massachusetts 01730
(Address of Principal Executive Offices)

(Zip Code)

(781) 276-4000
(Registrant's Telephone Number, Including Area Code)

Securities registered pursuant to Section 12(b) of the Act:

Title of Each Class	Name of Each Exchange on Which Registered
Common Stock, par value $.01 per share	**The Nasdaq Global Market**

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

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ¨ No x

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes ¨ No x

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 x 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 (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x 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. x

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

Large Accelerated Filer¨ Accelerated Filer x Non-Accelerated Filer ¨ Smaller Reporting Company ¨

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act). Yes ¨ No x

As of June 30, 2016 the aggregate market value of the registrant's common stock held by non-affiliates of the registrant, based on the closing sale price as reported on the Nasdaq Global Market, was approximately $62,581,598.

The number of shares outstanding of the registrant's common stock as of February 3, 2017 was 22,431,324.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement to be delivered to shareholders in connection with the registrant's Annual Meeting of Shareholders to be held on May 24, 2017 are incorporated by reference into Part III of this Annual Report on Form 10-K.

AWARE, INC.

FORM 10-K

FOR THE YEAR ENDED DECEMBER 31, 2016

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PART I

FORWARD LOOKING STATEMENTS

Matters discussed in this Annual Report on Form 10-K relating to future events or our future performance, including any discussion, express or implied, of our anticipated growth, operating results, future earnings per share, market opportunity, plans and objectives, are “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These statements are often identified by the words “may,” “will,” “expect,” “believe,” “anticipate,” “intend,” “could,” “estimate,” or “continue,” and expressions or variations. Such forward-looking statements are subject to risks, uncertainties and other factors that could cause actual results and the timing of certain events to differ materially from future results expressed or implied by such forward-looking statements. Factors that could cause or contribute to such differences include, but are not limited to, those discussed in the section titled “Risk Factors,” set forth in Item 1A of this Annual Report on Form 10-K and elsewhere in this Report. The forward-looking statements in this Annual Report on Form 10-K represent our views as of the date of this Annual Report on Form 10-K. We anticipate that subsequent events and developments will cause our views to change. However, while we may elect to update these forward-looking statements at some point in the future, we have no current intention of doing so except to the extent required by applicable law. You should, therefore, not rely on these forward-looking statements as representing our views as of any date subsequent to the date of this Annual Report on Form 10-K.

ITEM 1. BUSINESS

Company Overview

Aware, Inc. (“Aware”, “we”, “us”, “our”, or the “Company”) is a leading provider of software and services to the biometrics industry. We have been engaged in this business since 1993. Our software products are used in government and commercial biometrics systems to identify or authenticate people. Principal government applications of biometrics systems include border control, visitor screening, law enforcement, national defense, intelligence, secure credentialing, access control, and background checks. Principal commercial applications include: i) user authentication for login to mobile devices, computers, networks, and software programs; ii) user authentication for financial transactions and purchases (online and in-person); iii) physical access control to buildings; and iv) screening and background checks of prospective employees and customers.

Our products provide interoperable, standards-compliant, field-proven biometric functionality and are used to capture, verify, format, compress and decompress biometric images as well as aggregate, analyze, process, match and transport

those images within biometric systems. We sell a broad range of software products for fingerprint, facial, and iris modalities. We also offer a variety of software engineering services, including: i) project planning and management; ii) system design; iii) software design, development, customization, configuration, and testing; and iv) software integration and installation. We sell our biometrics software products and services globally through systems integrators and OEMs, and directly to end user customers.

Aware was incorporated in Massachusetts in 1986. We are headquartered at 40 Middlesex Turnpike in Bedford, Massachusetts, and our telephone number at this address is (781) 276-4000. Our website address is *www.aware.com*. The information on our website is not part of this Form 10-K, unless expressly noted. Our stock is traded on the Nasdaq Global Market under the symbol AWRE.

Industry Background

Biometrics is the measurement of unique, individual physiological characteristics, such as fingerprints, faces, irises, and voices that can be used to determine or verify an individual's identity. The biometrics industry offers technology that digitally captures and encodes biometric characteristics and then compares those characteristics against previously encoded biometric data to determine or verify an individual's identity. Biometrics addresses the limitations inherent in traditional identification and authentication processes, such as paper credentials, passwords, PIN codes, and magnetic access cards.

The biometrics industry provides solutions for a broad range of government and commercial applications. Principal government biometrics applications include border control, visitor screening, law enforcement, national defense, intelligence, secure credentialing, access control and background checks. Principal commercial applications include: i) user authentication for login to mobile devices, computers, networks, and software programs; ii) user authentication for financial transactions and purchases (online and in-person); iii) physical access control to buildings; and iv) screening and background checks of prospective employees and customers.

We believe that government and commercial entities will continue to adopt and expand the use of biometrics-enabled solutions to address the limitations and vulnerabilities of traditional identification and authentication processes. We believe the following factors, among others, will contribute to the growth of biometrics solutions: i) government-mandated implementation of identification for employees, citizens, and foreign nationals to enhance national security; ii) military implementations for the identification of terrorists and other hostile persons; iii) increasing threats to personal security encountered in areas such as transportation; iv) government and commercial efforts to detect and reduce fraud and cybercrime; v) adoption of biometrics on mobile devices; and vi) the emergence and adoption of international biometrics standards.

The biometrics industry may be segmented into government and commercial sub-markets. While these markets are similar in many respects and share similar characteristics and technology, certain aspects of the markets are different. We believe that this market-based distinction is important to an understanding of Aware’s business as the vast majority of our revenue is currently derived from government customers.

Government market

Governments throughout the world were early adopters of biometrics technology and continue to be the largest consumers of the technology. Biometrics technology is used by local, state, and national governments.

At the local and state level, biometrics technology is used in the following applications:

- Law enforcement applications that enable officers in the field to correctly identify potential suspects more reliably and efficiently by submitting biometrics samples to state or federal biometric search services;
- Background checks for employment screening;
- Drivers’ licenses and identification cards; and
- Benefits issuance.

At the national level, biometrics technology is used in the following applications:

- Border control

National governments throughout the world have mandated increased spending on security measures, implemented new regulations and placed greater emphasis on technology to address growing security concerns. Immigration and border control agencies have taken steps to improve security in response to heightened concerns over public safety from the threat of terrorism. They use biometrics to help establish the identity of visitors upon application for a visa or upon arrival at border checkpoints. For example, the U.S. Office of Biometric Identity Management currently requires foreign visitors entering the United States to have their ten fingers scanned and a facial photograph taken to determine if they are present on a watch list. The European Union now mandates that e-passports include fingerprint data in addition to a digital photograph.

- Defense

Within military organizations, key applications of biometrics include: i) background checks of military personnel and contractors; ii) access control to physical and digital assets; and iii) identification of unknown and potentially hostile persons by a comparison of their biometric sample against a watch list.

- Law enforcement and background checks

Law enforcement agencies perform background checks that use biometrics to help confirm the identity of individuals who might be present in a biometric database. Background checks might also be provided as a service to other agencies within the government.

- Physical access control

Governments also use biometrics for physical access control by storing biometric data on a digital ID card and performing a match to verify that the holder of the card is the same person who was issued the card. Biometrics are also used for securing access to digital assets, where a biometric match might be required in addition to a password to gain access to a computer system.

Government biometrics systems typically operate on client/server-based computer networks. Enrollment workstations with peripheral capture devices are used to enroll individuals into biometrics systems. Enrollment involves the capture, processing, and formatting of "biometric samples." A "biometric sample" is biometric data which may include: i) images of fingerprints, faces, or irises; ii) digital voice signals; or iii) some other electronic representation of a biometric characteristic. Examples of capture peripherals include: i) scanners for fingerprint images, ii) cameras for iris and facial images, iii) handheld devices for mobile capture of fingerprint, iris, and facial images, or iv) mobile phones and/or micro phones for voice signals.

After biometric samples are captured, they are transported in digital form to centralized matching systems for identification. Equipment used to perform these functions includes: i) servers to process and transport biometric samples; and ii) mainframe computers and servers to store and match those samples. In addition, military applications may employ handheld devices that are capable of capturing samples and matching those samples against sample databases that reside on the devices.

Due to the nature of government applications, particularly those involving security and defense, government biometrics systems must be capable of accurately and rapidly searching and matching biometric samples against large databases of stored samples. The ability to accurately and rapidly match samples against databases of millions of samples is critical because incorrect or delayed results could have severe adverse consequences. These requirements are an important distinguishing characteristic of the government market as compared to the commercial market.

Another characteristic that defines government markets can be seen in the difference between biometric identification and biometric verification. Biometric identification involves a one-to-many search of thousands or even millions of records to determine which, if any, record belongs to the individual in question. Government applications tend to involve biometric identification.

Biometric verification involves a one-to-one biometric comparison that serves to verify that both biometric samples belong to the same individual. One-to-one matches tend to require less algorithmic accuracy, speed, sensor fidelity, and computer processing power than "one-to-many" searches performed on large databases of stored biometric records. Commercial applications tend to involve biometric verification.

Commercial market

Principal biometrics applications in commercial markets involve the authentication and/or identification of individuals. The types of users that may need to be authenticated or identified in commercial applications include customers, employees, suppliers, visitors, patients, or other parties wishing to gain access to information, systems,

bank accounts, credit card accounts, events, devices, buildings, or organizations.

Biometrics-based solutions compete with more traditional security methods including keys, cards, passwords, personal identification numbers (PINs) and security personnel in commercial markets. The adoption of biometrics by leading vendors of smartphones and other popular consumer products has increased users' confidence and comfort with biometrics as a convenient and secure means of authentication in place of or in addition to passwords. Biometrics solutions are also being considered in commercial markets as a means of increasing security and reducing fraud as part of "know-your-customer" and "know-your-employee" efforts. "Know-your-customer" initiatives are designed to verify the identity of customers before providing products or services. "Know-your-employee" initiatives are designed to verify the identity of employment candidates upon application for employment.

Commercial markets for biometrics technology are in the process of developing and evolving. The rate of adoption of biometrics in commercial markets depends upon a number of factors, including: i) the performance and reliability of biometric solutions; ii) costs involved in adopting and integrating biometric solutions; iii) public concerns regarding privacy, including potential privacy legislation; and iv) standardization efforts by various industry consortia and standards bodies.

Examples of commercial market applications include:

- User authentication for login and access to mobile devices, computers, networks, and software programs.
- User authentication for financial transactions in the financial services industry.
- User authentication for in-person or online purchases in the retail industry.

- User authentication for physical access to secured buildings and perimeters.
- User authentication of employees to access private patient information in the healthcare industry.
- Identity verification of patients in hospital and surgical settings.
- Identity verification of test takers in the educational testing industry.
- Identification of prospective customers in the financial services industry.
- Identification of candidates for pre-employment screening and background checks.
- Identification of undesirable customers in the gaming industry.

We believe the commercial biometrics market may be further segmented into: i) a mobile segment; and ii) an enterprise segment. While we believe this delineation serves a useful purpose in describing the current state of the market, it has its limitations because the two segments overlap.

Mobile segment – Mobile devices, such as smartphones and tablets, are now capable of: i) capturing biometric samples (e.g., fingerprints, facial and iris images, and voices); ii) processing and storing those samples in a secure area on the device; and iii) matching new live samples against the stored samples. Once a biometric match is achieved, the subsequent software functions are analogous to password authentication. This type of biometric authentication is sometimes referred to as a “one-to-one” match and it requires a less complex and robust biometric match capability than that used in large server-based systems for biometric search.

Mobile biometric authentication is incorporated into most smartphones using: i) biometric sensors, such as fingerprint sensors and cameras; and ii) functionality that is part of the smartphone operating system and hardware. In these environments, third-party applications on smartphones are generally granted access to biometric authentication results, but not raw biometric samples, hardware, relevant security functions, or other smartphone capabilities. In contrast, third party developers can create authentication applications using facial or voice biometric modalities by making use of cameras and microphones on phones as these components are not as tightly controlled.

There are applications where it is desirable to implement biometric security features that are independent of those provided by device manufacturers. Several advantages include higher level security and uniform functionality across different device models. Once enabled with more robust biometric authentication capabilities, mobile devices may be used to gain access to online networks, systems, services, or accounts.

User authentication enabled by smartphones continues to evolve, and we expect to see further changes in smartphone security features and functionality. In the past year the FIDO® (Fast IDentity Online) Alliance, an industry consortium, has emerged to take a leading role in promoting technical standards for password-free authentication on mobile devices and desktops. The FIDO Alliance is developing specifications that define an open, scalable, interoperable set of mechanisms that supplant reliance on passwords to securely authenticate users of online services. The new standard for security devices and browser plugins will allow any website or cloud application to interface with a broad variety of existing and future FIDO-enabled devices that the user has for online security.

Enterprise segment – Enterprise biometrics systems are similar to government systems in that they typically operate in a client/server environment that: i) captures biometrics samples on a client PC or mobile device; ii) stores those samples in a database on a server, and then, when queried; iii) matches live samples against stored samples. Mobile devices are likely to be used in conjunction with enterprise systems as we have seen a desire by customers to use smartphones as enrollment and access devices.

Opportunities and customer demand are beginning to emerge in the enterprise segment of the commercial market, but it remains a nascent and evolving market. We are beginning to see three potential types of opportunities, including:

1. Internal biometrics systems - Some customers want to purchase, install, and maintain custom or off-the shelf biometrics systems that they will operate. These customers tend to have a critical need or the scale to justify the cost of acquiring an internal biometrics system. Companies in the financial services industry would be an example of this class of customer.

2. Biometrics-as-a-service - Biometrics are often provided as services in government settings. For example, many traditional government biometrics systems can be considered a service provided to other government entities, such as those offered by the FBI to state and local law enforcement agencies.

Biometrics service providers have begun to offer pay-per-transaction biometrics service offerings in commercial markets. These services allow organizations to biometrically identify or verify employees, customers, or other individuals relevant to their business. A pay-per-transaction model may be potentially more financially attractive for some organizations as compared to the cost of purchasing, installing and maintaining internal biometrics systems.

3. Biometrically-enabled solutions – There are companies that offer products, systems, or solutions that are not principally marketed as biometrics products, but include biometrically-enabled components. These vendors represent an opportunity for core biometrics technology providers, because they generally do not own core biometrics technology. Examples of this class of customer would be companies that offer secure identification/access solutions or biometrics smart cards.

Biometrics industry participants

There are a large number of vendors that serve government and commercial biometrics markets. In order to provide an understanding of the biometrics industry and our role in it, we have categorized industry participants into categories that have been defined by us. While we believe our categorization is a reasonable representation of the industry, we acknowledge that: i) knowledgeable industry participants may define categories differently or classify vendors differently; and ii) not all companies involved in the industry were included. Accordingly, the classification that follows represents our perspective on the industry.

We believe that biometrics industry participants may be classified into the following categories:

1) Core technology suppliers
2) System integrators
3) Fully integrated solution suppliers
4) Biometrics-as-a-service providers
5) Vendors of biometrically-enabled solutions

Category descriptions and companies that offer products and services in each category are provided below. It should be noted that some companies appear in multiple categories.

1) <u>Core technology suppliers</u>

Core biometrics technology includes hardware and software products that enable: i) traditional biometrics systems used by government and commercial customers; ii) new biometric service offerings; and iii) biometrically-enabled functionality embedded in other products and solutions. Core biometrics technology includes three types of products:

i) sensor products, ii) biometric capture devices, and iii) software products.

Sensor products

Biometrics sensors are primarily silicon-based devices that capture biometrics samples, such as fingerprints. Sensors are typically embedded in other devices, such as smartphones or biometric capture devices.

Examples of companies that offer biometric sensor products include: 1) Qualcomm Technologies, Inc.; 2) Sonavation, Inc.; 3) Synaptics, Inc.; 4) Fingerprint Cards AB; 5) Integrated Biometrics, LLC; and 6) Next Biometrics AS.

Biometric capture devices

Biometric capture devices are designed to capture and process biometric samples as their primary function. These products may be strictly hardware products or hardware products that also incorporate biometrics software.

Examples of companies that offer biometric capture devices include: 1) Cross Match Technologies, Inc.; 2) Suprema, Inc.; 3) HID Global Corporation ("HID"); 4) Iris ID Systems, Inc ("Iris ID"); 5) Precise Biometrics AB ("Precise Biometrics"); 6) Credence ID, LLC; 7) SecuGen Corporation; 8) IrisGuard, Inc. ("IrisGuard"); 9) Aurora Biometrics, Inc. ("Aurora Biometrics"); 10) EyeLock LLC ("EyeLock"); and 11) Tascent, Inc.

Software products

Biometrics software products provide functionality that captures, formats, stores, processes, or matches samples of fingerprints, faces, iris, voices and other modalities. Biometrics software is capable of operating on a variety of equipment platforms, including personal computers, smartphones, biometric capture devices, hand-held devices, servers, and mainframe computers.

Examples of companies that offer biometrics software products include: 1) Aware, Inc.; 2) Safran Identity & Security (formerly Morpho), which is a unit of Safran SA ("Safran"); 3) 3M Cogent Inc. ("3M Cogent"); 4) NEC Corporation ("NEC"); 5) Cognitec Systems GmbH ("Cognitec"); 6) Neurotechnology; 7) Iritech, Inc. ("Iritech"); 8) Innovatrics s.r.o. ("Innovatrics"); 9) SpeechPro, Inc.; 10) Agnitio S.L. which was acquired by Nuance Communications, Inc. in 2016; 11) Precise Biometrics; 12) VoiceTrust GmbH.; 13) Eyelock; 14) BIO-key International, Inc.; 15) VoiceVault Inc.; 16) EyeVerify, Inc.; 17) Iris ID; 18) Dermalog Identification Systems GmbH ("Dermalog"); 19) FacePhi Biometria; and 20) Sensory, Inc.

2) System integrators

System integrators purchase hardware and software technology from core biometrics technology vendors and incorporate those components into customized biometrics systems that they deliver to end-user customers. Historically those end-user customers have been governments, but in recent years system integrators have begun to serve commercial enterprise customers as well. System integrators include large multinationals with a broad range of expertise and the capacity to execute very large projects, as well as smaller system integrators that have more focused expertise on a particular market sector, technology, or geography. Some system integrators have developed their own biometric technologies that they deliver as part of their solutions.

Examples of companies that offer systems integration services include: 1) Northrop Grumman Corporation; 2) Science Applications International Corporation; 3) Hewlett-Packard Enterprise Services; 4) International Business Machines Corporation; 5) Fujitsu Limited; 6) Accenture plc; 7) Unisys Corporation; 8) Leidos, Inc.; and 9) ManTech International Corporation.

3) Fully integrated solutions suppliers

Fully integrated solutions suppliers are similar to systems integrators in that they deliver customized biometrics systems to government and commercial enterprise end-user customers. They differ from system integrators in that they use core hardware and software technologies that they developed in-house or acquired from others. Vendors in this category may purchase some third party software, but we believe such purchases represent a minor component of the overall systems they deliver.

There are three large global suppliers of fully integrated solutions, including: 1) Safran; 2) 3M Cogent; and 3) NEC. We believe these companies supply a large percentage of the biometric systems that are delivered to government customers around the world.

In addition to these three large suppliers, we would categorize Dermalog as a fully integrated solution provider, but one that operates on a smaller scale. Aware also has a product portfolio and services capability that enables us to deliver fully integrated solutions. We have acted in this capacity on a limited basis in the past and an element of our strategy is to grow this part of our business in the future.

4) Biometrics-as-a-service providers

Biometrics service providers have begun to offer a pay-per-transaction biometrics service offering. This service allows organizations to biometrically identify or verify employees, customers, or other individuals relevant to their business. A pay-per-transaction model may be potentially more financially attractive for some organizations as compared to the cost of purchasing, installing and maintaining internal biometrics systems.

Examples of companies offering biometrics services include: 1) Certibio Identidade Biometrica, a wholly-owned subsidiary of Certisign Certificadora Digital S.A. (“Certisign”); 2) Safran; 3) RightPatient, Inc.; 4) Microsoft Corporation; 5) SkyBiometry, Inc.; 6) BioID GmbH; and 7) VoiceIt Technologies, LLC.

5) Vendors of biometrically-enabled solutions

Vendors of biometrically-enabled solutions provide products that are not principally marketed as biometrics products, but include biometric functionality. Biometrics capability is a feature, but not the chief function of these products. Such vendors represent a potential opportunity for core biometrics technology providers as some of them do not own core biometrics technology.

Examples of companies that offer biometrically-enabled smartphone products include: 1) Apple, Inc.; 2) Samsung Electronics Co., Ltd.; and 3) Google, Inc.

Examples of companies that offer secure identification/access solutions that incorporate biometrically-enabled components include: 1) Gemalto NV; 2) HID; 3) Entrust Datacard Corporation; and 4) Oberthur Technologies.

Examples of companies that offer physical access control solutions that may incorporate biometrics include: 1) Honeywell International, Inc.; 2) Tyco International Ltd.; 3) Lenel Systems International Inc.; and 4) Stanley Security Limited.

Products and Services

Software products

We sell a broad range of biometrics software products that enable important functions in biometrics systems, including:

1. Enrollment, analysis, and processing of biometric images and data on workstations or mobile devices.
2. Integration of peripheral biometric capture devices.
3. Centralized workflow, transaction processing, and subsystem integration.
4. Matching of biometric samples against biometric databases to authenticate or verify identities; and
5. Analysis and processing of text-based identity data.

Our biometrics software products range from discrete software blocks, such as software development kits ("SDKs") that customers can use to develop their own solutions to more complete applications that customers can use to reduce or eliminate their development times. Our products are described below.

1) Biometric Services Platform

Our Biometric Services Platform product is called BioSP™. BioSP is a service-oriented platform used to enable a biometric system with advanced biometric data processing and management functionality in a web services architecture. It provides workflow, data management and formatting, and other important utilities for large-scale fingerprint recognition, face recognition, and iris recognition systems. BioSP is well suited for applications that require the collection of biometrics throughout a distributed network, and subsequent aggregation, analysis, processing, distribution, matching, and sharing of data with other system components. BioSP is modular, programmable, scalable, and secure, capable of managing all aspects of transaction workflow including messaging, submissions, responses, and logging. BioSP makes extensive use of open-source components and is J2EE-compliant.

2) Biometric Search and Match

We have three types of biometric search and match products, including:

Automated Biometric Identification System ("ABIS")

Our ABIS product offering is called Astra™. Astra is used for large-scale fingerprint recognition, face recognition, iris recognition, and text-based name matching and identity resolution. It is a highly scalable biometric identification and authentication platform that performs one-to-many search or one-to-one match against large stores of biometrics and other identity data. It does so by deploying biometric and text data and matching algorithms across a cluster of multiple computing nodes.

Biometric Search and Match SDKs

Our line of biometric search and match SDKs is call Nexa™ and it includes Nexa|Fingerprint™, Nexa|Face™, and Nexa|Iris™ These products provide high-performance biometric algorithms for fingerprint, facial and iris identification or authentication. The algorithms in these products convert images into biometric templates, which can then be compared to templates stored in databases to find matches.

Each Nexa SDK can be deployed on a workstation or a server, either as a standalone biometric search/match API, or in combination with our other SDKs, applications, BioSP, or Astra products. Our SequenceCheck, PreFace, and IrisCheck SDKs may be used in concert with Nexa libraries to perform optional quality assurance and preprocessing for enhanced fingerprint, face, and iris search and match functionality.

Interoperable Fingerprint Matching SDK

Our product offering in this category is called AwareXM™. AwareXM is an SDK that provides MINEX-certified, INCITS 378-compliant fingerprint minutiae extraction, template generation, and fingerprint authentication.

3) Text Search and Identity Analytics SDKs

Our product offering in this category is called Inquire™. Inquire is a software development kit that performs fuzzy text-based filtering, searching, matching, and linking functions towards discovery of useful information in identity data. Analysis of text-based identity data is naturally complementary to biometric verification and identification, and Inquire is optimized for processing and analysis of data that includes biometrics.

Inquire provides many advanced text matching comparison algorithms and flexibility in how matching algorithms behave (e.g. thresholds, data definitions). It can be used to perform advanced analysis of text-based identity data for several useful investigative applications including data analysis and quality assurance, data integration, identity resolution, and link analysis. Inquire is fully scalable, with infrastructure that automatically determines processing resources and optimizes their utilization.

4) Biometric Applications.

Our products in this category combine user interfaces with multiple Aware software products to create more complete applications that operate on client workstations or mobile devices. We have four types of biometric application products, including:

Enrollment – Fingerprint, Face, and Iris

Our enrollment application products include Universal Registration Client ("URC™") and WebEnroll.

- URC is a configurable Windows-based enrollment application that performs a variety of biometric data capture, analysis, matching, formatting, and hardware abstraction functions.

- WebEnroll is a browser-based enrollment application available as an option with BioSP that captures biographic data, fingerprints, facial images, and iris images.

Fingerprint Cards

Our fingerprint card products include FormScannerSE™ and FormScannerMB™. The two products are independent applications that may be used for scanning and processing of inked fingerprint cards.

- FormScannerSE is designed for one-at-a-time, assisted “scan and entry” processing of fingerprint cards, such as for manual data entry of previously scanned card batches. It can also be used for manual “rework” such as crop region adjustments.

- FormScannerMB is designed for “multi-batch” scanning of large volumes of cards in an automated fashion, and provides features useful for high-volume processing such as support for automatic document feeding and real-time image quality feedback.

Forensic Analysis and QA

Our forensic analysis and quality assurance products include our WorkbenchSuite™ of products. WorkbenchSuite is a family of .NET workstation applications that are designed to be used by an operator to analyze and repair or otherwise process digital records containing biometric images and data. Each targets a particular use case and implements workflow carefully designed to best assist analysts in their task. The suite comprises:

- Forensic Workbench which is used for the categorization, processing, and standards-compliant formatting of biometric images and demographic data.

- Sequence Workbench which is used for the detection and assisted repair of fingerprint records containing sequence errors.

- CrosslinkWorkbench which is used for assisting with identifying and repairing of crosslink errors in ANSI/NIST ITL transactions. Crosslinks are biometric records that erroneously contain data from different individuals.

· FaceWorkbench which enables an analyst to analyze and process candidates returned from a biometric face search.

Military-Grade Enrollment and Search

· URC|Tactical™ is a software application for performing biometric enrollment, identification, and screening on ruggedized mobile biometric devices, such as those used by military personnel in the field. It allows the operator to capture both biographic and biometric data from subjects and then match the biometric information to onboard watch lists and known mission-encountered individuals.

5) Biometric Enrollment SDKs. Our software development kits consist of: i) multiple software libraries; ii) sample applications that show customers how to use the libraries; and iii) documentation. Customers use our SDKs to design and develop biometrics applications. Our suite of enrollment SDKs performs a variety of functions that are critical to biometric enrollment, including image capture, image quality assurance, image formatting, and image compression. Our enrollment SDK products include:

· *Biometric Capture and Hardware Abstraction* – This group of products includes: i) LiveScan API; ii) PreFace™; iii) IrisCheck™; and iv) SequenceCheck™.

· *Data Formatting and Validation* – This group of products includes: i) NISTPack; ii) ICAOPack; and iii) PIVPack™.

· *Fingerprint Enrollment Bundle* – Our product in this category is called CaptureSuite™. CaptureSuite is a bundle of software development kits that support the development of applications with comprehensive functionality for capture of either live scan or card scan fingerprint images. CaptureSuite provides quality and compliance assurance mechanisms for applications, such as fingerprint recognition, fingerprint authentication, and automated fingerprint identification systems.

· *Fingerprint Cards* – This group of products includes: i) AccuScan™; and ii) AccuPrint™.

· Image Compression – This group of products includes: i) Aware WSQ1000; and ii) Aware JPEG2000.

· *Controls and applets* - This group of products consists of our BioComponents™ line of products. Our BioComponents products allow customers to develop biometric enrollment applications more quickly than if they purchased our SDKs. Each product in the group includes a user interface and one or more software libraries that perform a discrete set of functions, such as automated image capture, quality assurance, and capture hardware integration. BioComponents comprise modular, independent, self-contained software components that can operate either independently or in concert with one another. Specific BioComponents products and the functions they perform are:

- BiographicComponent enables highly configurable data entry of biographic and textual information.
- FingerprintComponent is used to capture, verify image quality, and compress fingerprint images.
- FaceComponent is used to capture, verify image quality, and manipulate facial images.
- IrisComponent is used to capture, segment, and verify image quality of iris images.
- TravelDocComponent is used to authenticate travel documents, such as passports and driver's licenses.
- ScanningComponent is used to scan forms such as inked fingerprint cards.
- PrintingComponent is used for printing FBI-quality fingerprint images on cards and forms.
- SignatureComponent is used to collect handwritten signature images from an electronic signature pad.
- PackagingComponent allows access to the data sets from the other components.

6) Mobile Biometrics

Over the past few years, we have modified some of our traditional Windows-based, client-server products for mobile devices that operate on Android and iOS platforms. As of the end of 2016, our mobile biometrics product line-up included:

Biometric Authentication

In 2016, we announced our FIDO® Suite of software products for biometric authentication on mobile devices. FIDOSuite is a family of products that are certified by the FIDO Alliance and are interoperable with other FIDO-certified products. Our FIDOSuite includes: i) Aware FIDO® Face Authenticator; ii) Aware FIDO® Client; and iii) Aware FIDO® Server. These products are available for Android and iOS devices and enable the functionality described below.

The FIDO authentication process employs a challenge/response mechanism using digital signatures that works in a two-step process as follows:

Registration: Users complete a registration process by submitting their biometrics and PIN through a special app or website. If there is a successful biometric/PIN match, a public key pair is created. A private key is retained on the client in a cryptographic keystore and a public key is sent to a server where it is saved in a keystore under a user's ID.

Login: When users attempt to login, a FIDO authentication server creates a random challenge and sends it to the FIDO client. The biometrics and PIN are matched locally by a FIDO authenticator against the biometrics enrolled for that user. Biometrics data is never transmitted to the server. Users are prompted again to enter their biometrics and PIN. If the match is successful, the private key from the FIDO client keystore is unlocked. The FIDO client signs the challenge using the user's private key and sends it to the FIDO server. The server verifies the signature using the public key received during registration and the user is permitted to login.

Mobile Enrollment and Search

We also offer several other products for mobile biometric enrollment and search, including:

URC|Mobile™ is a software application for capturing fingerprint and facial images on an Android smart phone or tablet using its onboard camera and a tethered fingerprint capture device. It is designed to be used by an enrollment attendant for rapid capture and quality assurance of biometric data and submission to a centralized biometric database for enrollment, search, or authentication. URC|Mobile is best suited for an environment where mobility beyond a desktop is useful or where a more economical client platform than a desktop solution is needed.

Mobile SDKs – We have ported some of our Windows-based SDKs to mobile operating systems, including iOS and Android. They offer the same functionality as the Windows versions, and include documentation and reference applications specific to these operating systems. Our family of mobile SDKs includes: i) NexalFace™ Mobile; ii)

NexaIFingerprint™ Mobile; iii) PreFace™ Mobile; iv) LiveScan API Mobile; v) NISTPack Mobile; vi) WSQ1000 Mobile; and vii) AwareXM™ Mobile.

Imaging products

In addition to our biometrics software products, we also sell products used in applications involving medical and advanced imaging. Our principal imaging product is Aware JPEG 2000, which is based on the JPEG2000 standard. The JPEG2000 standard is an image compression standard and coding system that was created by the Joint Photographic Experts Group committee in 2000. Our JPEG2000 product is used to compress, store, and display images. Those images are typically medical images.

Software maintenance

We also sell software maintenance contracts to many of our customers who purchase software licenses. These contracts typically have a one year term during which customers have the right to receive technical support and software updates, if and when they become available. Customers tend to renew maintenance contracts during the period of time that our software is being used in their biometrics systems.

Services

We offer a variety of software engineering services, including: i) project planning and management; ii) system design; iii) software design, development, customization, configuration, and testing; and iv) software integration and installation. Services are typically, but not always, sold in conjunction with software licenses.

Service engagement deliverables may include: i) custom-designed software products; ii) custom-configured versions of existing software products; iii) one or more subsystems comprised of software products that are integrated within a larger system; or iv) complete software solutions. In some cases, the software resulting from service engagements may form the basis for new or improved Aware software products.

Our customers for services include: i) government agencies; ii) large multinational systems integrators; iii) smaller systems integrators with a particular market, technology or geographic focus; and iv) commercial providers of products, solutions, and services. We provide services directly to end-users or indirectly to end-users through systems integrators. When we provide services to systems integrators, they are often engaged with the end-user as a prime contractor and are responsible for delivery of a complete solution, in which case we typically serve as a subcontractor assigned a subset of the total scope of work.

The scope of our services projects varies. A small project might involve configuration and testing of a single software product, taking a small team one month or less. A large project might involve delivery of a more complex solution comprised of multiple products and subsystems, requiring a larger team to conduct project management, system design, software customization and integration, and taking up to one year or more. Some projects are followed by subsequent projects that serve to change or extend the features and functionality of the initial system.

Hardware products

We developed a biometrics software system for a U.S. government customer under a Small Business Innovation Research (“SBIR”) contract that began in 2008 and ended in early 2013. When the software development project ended in early 2013, we entered into a separate contract to supply hardware products incorporating the developed software. Hardware products sold to this customer integrate the developed software with: i) hardware purchased from third parties; ii) software purchased from third parties; and iii) some of our biometrics software products. While other customers could theoretically purchase the hardware products developed for this customer, we believe that it is unlikely that they will do so, because of the highly customized nature of the products.

Sales and Marketing

As of December 31, 2016, we had a total of 11 employees in our sales and marketing organization. In addition to our employee sales staff, we also engage third party sales agents to sell our products and services in foreign countries.

We sell our products and services through three principal channels of distribution:

i) Systems integrator channel – we sell to systems integrators that incorporate our software products into biometrics systems that are delivered primarily to government end users.

ii) OEM channel – we sell to hardware and software solution providers that incorporate our software products into their products.

iii) Direct channel – we also sell directly to government, and, to a lesser degree, to commercial customers.

All of our revenue in 2016, 2015, and 2014 was derived from unaffiliated customers. Revenue from the U.S. Marine Corps represented 18%, 3%, and 10% of total revenue during 2016, 2015, and 2014, respectively. Revenue from Leidos, Inc. represented 18%, 6%, and 1% of total revenue during 2016, 2015, and 2014, respectively. Revenue from Telos Corporation represented 12%, 2%, and 5% of total revenue during 2016, 2015, and 2014, respectively. Revenue from the U.S. Navy represented 6%, 9%, and 24% of total revenue during 2016, 2015, and 2014, respectively. Revenue from Certisign Certificadora Digital S.A. represented 5%, 10%, and 2% of total revenue during 2016, 2015, and 2014, respectively. No other customer represented 10% or more of total revenue in any of those years.

Competition

The markets for our products and services are competitive and uncertain. We compete against: i) other companies that provide biometric software solutions; and ii) fully diversified companies that provide biometric software solutions and also act as systems integrators. We can give no assurance that: i) our products and services will succeed in the market; ii) that we will be able to compete effectively; or iii) that competitive pressures will not seriously harm our business.

Many of our competitors are larger than us and have significantly greater financial, technological, marketing and personnel resources than we do. At the other end of the competitive spectrum, we have seen increasing competition from smaller biometrics companies in foreign countries. These smaller foreign competitors have demonstrated a willingness to sell their biometrics software products at low prices.

We can give no assurance that our customers will continue to purchase products from us or that we will be able to compete effectively in obtaining new customers to maintain or grow our business.

Aware's Strategy

Our strategy is to capitalize on our strong brand and reputation to sell biometrics software products and services into government and commercial markets. We intend to offer a broad portfolio of high quality products that are coupled with expert technical support and services. We expect to continue to employ a three-pronged distribution strategy using systems integrators, OEMs, and direct sales.

Our strategy for growing our biometrics business may include one or more of the following elements:

i) *Product strategy* – Our product strategy is to offer more complete biometrics solutions. We believe this strategy will allow us to us to sell more software and services into biometrics projects. We recognized the need to make this transition several years ago and developed new products to enable this strategy.

Our strategy to offer complete solutions involves:

- Product line expansion - Our aim is to expand our product portfolio by adding new products and increasing the functionality of existing products using our internal engineering teams. This means we may add resources to our engineering staff. To the extent we are unable to develop critical new technologies internally, we may purchase or license such technologies from third parties. Alternatively, we may also acquire biometrics companies provided we believe the acquisition cost is reasonable relative to the estimated future revenue and profits the acquired company may produce.

- Engineering services – We believe that services are an important element of our strategy to sell complete solutions. We intend to have adequate engineering resources on hand to ensure that we can staff projects with the technical expertise we need to win new projects.

ii) *Market strategy* – Our market strategy is to continue to focus on our legacy government biometrics market and expand into new commercial biometrics markets. Historically our revenue has been primarily derived from the government biometrics market and we intend to continue our focus there.

We believe the evolution of commercial markets over the past few years may present mobile authentication and enterprise opportunities. To that end, we have modified some of our products to enable us to participate in these markets.

iii) *Sales strategy* – While the United States remains a large market, we believe there are attractive growth opportunities in international markets. We intend to continue our focus on international markets and pursue opportunities in those markets through our sales staff and third party sales agents.

As we attempt to grow our biometrics business, we may make investments in growth initiatives, such as those described above, that may cause our profitability to decline in the near term.

In 2014, 2015 and 2016, we had sales of hardware products to a single U.S. government customer. It is unlikely that we will have meaningful sales of hardware in future periods as this customer appears to have completed the bulk of its purchasing. Accordingly, our strategy going forward does not include providing biometrics hardware.

Backlog

We had $3.3 million of backlog on December 31, 2016. We define backlog as revenue items in deferred revenue and undelivered orders in our backlog report. Total backlog of $3.3 million included: i) $2.9 million of software maintenance revenue of which approximately $2.7 million will be recognized during 2017; and ii) $0.4 million of services that we anticipate will be delivered in the first quarter of 2017.

Research and Development

Our research and development activities are focused on enhancing our existing products and developing new products. Our engineering organization is based in Bedford, Massachusetts. As of December 31, 2016, we had an engineering staff of 46 employees, representing 68% of our total employee staff.

During the years ended December 31, 2016, 2015, and 2014, research and development expenses totaled $6.9 million, $5.8 million, and $5.5 million, respectively. We expect that we will continue to invest substantial funds in research and development activities.

Patents and Intellectual Property

We rely on a combination of nondisclosure agreements and other contractual provisions, as well as patent, trademark, trade secret and copyright law to protect our proprietary rights. We have an active program to protect our proprietary technology through the filing of patents. As of December 31, 2016, we had approximately 47 U.S. and foreign patents and approximately 40 pending patent applications. Our patents and patent applications pertain primarily to biometrics and imaging compression.

Although we have patented certain aspects of our technology, we rely primarily on trade secrets to protect our intellectual property. We attempt to protect our trade secrets and other proprietary information through agreements with our customers, suppliers, employees and consultants, and through security measures. Each of our employees is required to sign a non-disclosure and non-competition agreement. Although we intend to protect our rights vigorously, we cannot assure you that these measures will be successful. In addition, effective intellectual property protection may be unavailable or limited in certain foreign countries.

Third parties may assert exclusive patent, copyright and other intellectual property rights to technologies that are important to us. From time to time, we receive claims from third parties suggesting that we may be obligated to license such intellectual property rights. If we were found to have infringed any third party's patents, we could be subject to substantial damages or an injunction preventing us from conducting our business.

Manufacturing & Systems Integration

We do not design or manufacture hardware products, however we have provided systems integration services for one U.S. government customer. Our systems integration activities include: i) procuring hardware and software components from third party suppliers; ii) installing Aware and third party software on the purchased hardware; and iii) testing products for quality assurance prior to shipment.

To the extent we receive any more orders for hardware revenue in the future, we rely on single source suppliers for certain critical hardware and software components. Our dependence on single source suppliers involves several risks, including limited control over availability, quality, and delivery schedules. Any delays in delivery or shortages of such components could cause delays in the shipment of our products, which could harm our business.

Employees

At December 31, 2016, we employed 68 people, including 46 in engineering, 11 in sales and marketing, and 11 in finance and administration. Of these employees, 65 were based in Massachusetts. None of our employees are represented by a labor union. We consider our employee relations to be good.

We believe that our future success will depend in large part on the service of our technical, sales, marketing and senior management personnel and upon our ability to retain highly qualified technical, sales and marketing and managerial personnel. We cannot assure you that we will be able to retain our key managers and employees or that we will be able to attract and retain additional highly qualified personnel in the future.

Segment Information; Financial Information About Geographic Areas

We organize ourselves into a single segment that reports to the chief operating decision makers. Summaries of revenue by geographic regions and revenue by product group are set forth in Note 8 to our consolidated financial statements included elsewhere in this Annual Report.

Available Information

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, proxy statements, and amendments to reports filed pursuant to Sections 13(a) and 15(d) of the Securities Exchange Act of 1934, as amended, are made available free of charge on or through our website at www.aware.com as soon as reasonably practicable after such reports are filed with, or furnished to, the Securities and Exchange Commission (the SEC). The SEC also maintains a website, www.sec.gov, that contains reports and other information regarding issuers that file electronically with the SEC. Such reports, proxy statements, and other information may also be obtained by visiting the Public Reference Room of the SEC at 100 F Street, N.E., Washington, DC, 20549 or by calling the SEC at 1-800-SEC-0330.

Copies of our (i) Corporate Governance Principles, (ii) charters for the Audit Committee, Compensation Committee, and Nominating Committee, and (iii) Code of Ethics are available in the Investor Relations section of our website at *www.aware.com*.

ITEM 1A. Risk Factors

Our operating results may fluctuate significantly from period-to-period and are difficult to predict.

Individual orders can represent a meaningful percentage of our revenues and net income in any single quarter and the timing of the receipt of those orders is difficult to predict. The failure to close an order or the deferral or cancellation of an order can result in revenue and net income shortfalls for that quarter. We base our current and future expense levels on our internal operating plans and sales forecasts, and our operating costs are to a large extent fixed. As a result, we may not be able to sufficiently reduce our costs in any quarter to adequately compensate for an unexpected near-term shortfall in revenues, and even a small shortfall could disproportionately and adversely affect financial results for that quarter.

Our financial results may be negatively affected by a number of factors, including the following:

- the lack or reduction of government funding and the political, budgetary and purchasing constraints of government customers who purchase products and services directly or indirectly from us;
- the terms of customer contracts that affect the timing of revenue recognition;
- the size and timing of our receipt of customer orders;
- significant fluctuations in demand for our products and services;
- the loss of a key customer or one of its key customers;
- new competitors, or the introduction of enhanced solutions from new or existing competitors;
- competitive pressures on selling prices;
- cancellations, delays or contract amendments by government customers;
- higher than expected costs, asset write-offs, and other one-time financial charges; and
- general economic trends and other factors

As a result of these factors, we believe that period-to-period comparisons of our revenue levels and operating results are not necessarily meaningful. You should not rely on our quarterly revenue and operating results to predict our future performance.

We derive a significant portion of our revenue directly or indirectly from government customers, and our business may be adversely affected by changes in the contracting or fiscal policies of those governmental entities.

We derive a significant portion of our revenue directly or indirectly from federal, international, state and local governments. We believe that the success and growth of our business will continue to depend on government customers purchasing our products and services either directly through us or indirectly through our channel partners. Changes in government contracting policies or government budgetary constraints may adversely affect our financial performance. Among the factors that could adversely affect our business are:

- changes in fiscal policies or decreases in available government funding,
- changes in government funding priorities;
- changes in government programs or applicable requirements;
- the adoption of new laws or regulations or changes to existing laws or regulations;
- changes in political or social attitudes with respect to security and defense issues;
- changes in audit policies and procedures of government entities;
- potential delays or changes in the government appropriations process; and
- delays in the payment of our invoices by government payment offices.

These and other factors could cause government customers or our channel partners to reduce purchases of products and services from us which would have a material adverse effect on our business, financial condition and operating results.

A significant commercial market for biometrics technology may not develop, and, even if it does, there can be no assurance our biometrics technology will be successful.

A component of our strategy to grow revenue includes expansion into commercial markets. To date, biometrics technology has received only limited acceptance in such markets. Although the recent appearance of biometric readers on popular consumer products, such as smartphones, has increased interest in biometrics as a means of authenticating and/or identifying individuals, commercial markets for biometrics technology are in the process of developing and evolving. Biometrics-based solutions compete with more traditional security methods including keys, cards, personal identification numbers and security personnel. Acceptance of biometrics as an alternative to such traditional methods depends upon a number of factors including: i) the performance and reliability of biometric solutions; ii) costs involved in adopting and integrating biometric solutions; iii) public concerns regarding privacy; and iv) potential privacy legislation.

For these reasons, we are uncertain whether there will be significant demand for biometrics technology from commercial markets. Moreover, even if there is significant demand, there can be no assurance that our biometrics products will achieve market acceptance.

We derive a significant portion of our revenue from third party channel partners.

Our future results depend upon the continued successful distribution of our products through a channel of systems integrators and OEM partners. Systems integrators, including value added resellers, use our software products as a component of the biometrics systems they deliver to their customers. OEMs embed our software products in their technology devices or software products. These channel partners typically sell their products and services to government customers.

Our failure to effectively manage our relationships with these third parties could impair the success of our sales, marketing and support activities. Moreover, the activities of these third parties are not within our direct control. The occurrence of any of the following events could have a material adverse effect on our business, financial condition and operating results:

- a reduction in sales efforts by our partners;
- the failure of our partners to win government awards in which our products are used;
- a reduction in technical capabilities or financial viability of our partners;
- a misalignment of interest between us and them;
- the termination of our relationship with a major systems integrator or OEM; or

· any adverse effect on a partner's business related to competition, pricing and other factors.

If the biometrics market does not experience significant growth or if our products do not achieve broad acceptance both domestically and internationally, we may not be able to grow our business.

Our revenues are derived primarily from sales of biometrics products and services. We cannot accurately predict the future growth rate or the size of the biometrics market. The expansion of the biometrics market and the market for our biometrics products and services depend on a number of factors, such as:

- the cost, performance and reliability of our products and services and the products and services offered by our competitors;
- the continued growth in demand for biometrics solutions within the government and law enforcement markets as well as the development and growth of demand for biometric solutions in markets outside of government and law enforcement;
- customers' perceptions regarding the benefits of biometrics solutions;
- public perceptions regarding the intrusiveness of these solutions and the manner in which organizations use the biometric information collected;
- public perceptions regarding the confidentiality of private information;
- proposed or enacted legislation related to privacy of information;
- customers' satisfaction with biometrics solutions; and
- marketing efforts and publicity regarding biometrics solutions.

Even if biometrics solutions gain wide market acceptance, our solutions may not adequately address market requirements and may not continue to gain market acceptance. If biometrics solutions generally or our solutions specifically do not gain wide market acceptance, we may not be able to achieve our anticipated level of growth and our revenues and results of operations would be adversely affected.

We face intense competition from other biometrics solutions providers.

A significant number of established companies have developed or are developing and marketing software and hardware for biometrics products and applications that currently compete with or will compete directly with our offerings. We believe that additional competitors will enter the biometrics market and become significant long-term competitors, and that, as a result, competition will increase. Companies competing with us may introduce solutions that are competitively priced, have increased performance or functionality or incorporate technological advances we have not yet developed or implemented. Our current principal competitors include:

- Diversified technology providers that offer integrated biometrics solutions to governments, law enforcement agencies and other organizations. This group of competitors includes companies such as Safran, 3M/Cogent, and NEC.

- Component providers that offer biometrics software and hardware components for fingerprint, facial, and iris biometric identification. This group of competitors includes companies such as Cognitec, Neurotechnology, Iritech, and Innovatrics.

We expect competition to intensify in the near term in the biometrics market. Many current and potential competitors have substantially greater financial, marketing, and research resources than we have. Moreover, low cost foreign competitors from third world and other countries have demonstrated a willingness to sell their products at significantly reduced prices. To compete effectively in this environment, we must continually develop and market new and enhanced solutions and technologies at competitive prices and must have the resources available to invest in significant research and development activities. Our failure to compete successfully could cause our revenues and market share to decline.

The biometrics industry is characterized by rapid technological change and evolving industry standards, which could render our existing products obsolete.

Our future success will depend upon our ability to develop and introduce a variety of new capabilities and enhancements to our existing products in order to address the changing and sophisticated needs of the marketplace. Frequently, technical development programs in the biometrics industry require assessments to be made of the future

direction of technology, which is inherently difficult to predict. Delays in introducing new products and enhancements, the failure to choose correctly among technical alternatives or the failure to offer innovative products or enhancements at competitive prices may cause customers to forego purchases of our products and purchase our competitors' products. We may not have adequate resources available to us or may not adequately keep pace with appropriate requirements in order to effectively compete in the marketplace.

Our software products may have errors, defects or bugs, which could result in delayed or lost revenue, expensive correction, liability to our customers, and claims against us.

Complex software products such as ours may contain errors, defects or bugs. Defects in the products that we develop and sell to our customers could require expensive corrections and result in delayed or lost revenue, adverse customer reaction and negative publicity about us or our products and services. Customers who are not satisfied with any of our products may also bring claims against us for damages, which, even if unsuccessful, would likely be time-consuming to defend, and could result in costly litigation and payment of damages. Such claims could harm our reputation, financial results and competitive position.

Our business may be adversely affected by our use of open source software.

The software industry is making increasing use of open source software in the development of products. We also license and integrate certain open source software components from third parties into our software. Open source software license agreements may require that the software code in these components or the software into which they are integrated be freely accessible under open source terms. Many features we may wish to add to our products in the future may be available as open source software and our development team may wish to make use of this software to reduce development costs and speed up the development process. While we carefully monitor the use of all open source software and try to ensure that no open source software is used in such a way as to require us to disclose the source code to the related product, such use could inadvertently occur. If we were required to make our software freely available, our business could be seriously harmed.

Hardware revenue is likely to decline or be zero in future periods.

In the years ended December 31, 2016, 2015 and 2014, we had hardware revenue of $0.3 million, $1.1 million, and $4.9 million, respectively. Gross profit on hardware revenue was $0.1 million, $0.4 million, and $1.4 million in 2016, 2015 and 2014, respectively.

Hardware revenue consisted of sales of biometrics equipment to a single U.S. government customer. While we are unable to predict future hardware sales with any degree of certainty, future orders from this customer may be minimal as we believe that the bulk of its purchases may have already occurred. We have no hardware orders in backlog as of December 31, 2016 and our strategy does not include selling biometrics hardware.

Our intellectual property is subject to limited protection.

Because we are a technology provider, our ability to protect our intellectual property and to operate without infringing the intellectual property rights of others is critical to our success. We regard our technology as proprietary. We rely on a combination of patent, trade secret, copyright, and trademark law as well as confidentiality agreements to protect our proprietary technology, and cannot assure you that we will be able to enforce the patents we own against third parties. Despite our efforts, these measures can only provide limited protection. Unauthorized third parties may try to copy or reverse engineer portions of our products or otherwise obtain and use our intellectual property. If we fail to protect our intellectual property rights adequately, our competitors may gain access to our technology, and our business would thus be harmed.

In the future, we may be involved in legal action to enforce our intellectual property rights relating to our patents, copyrights or trade secrets. Any such litigation could be costly and time-consuming for us, even if we were to prevail. Moreover, even if we are successful in protecting our proprietary information, our competitors may independently develop technologies substantially equivalent or superior to our technology. Accordingly, despite our efforts, we may be unable to prevent third parties from infringing upon or misappropriating our intellectual property or otherwise gaining access to our technology. The misappropriation of our technology or the development of competitive technology could seriously harm our business.

We may be sued by third parties for alleged infringement of their proprietary rights.

Our technology and products may infringe the intellectual property rights of others. A large and increasing number of participants in the technology industry, including companies known as non-practicing entities, have applied for or obtained patents. Some of these patent holders have demonstrated a readiness to commence litigation based on allegations of patent infringement. Third parties have asserted against us in the past and may assert against us in the future patent, copyright and other intellectual property rights to technologies that are important to our business.

Intellectual property rights can be uncertain and involve complex legal and factual questions. Moreover, intellectual property claims, with or without merit, can be time-consuming and expensive to litigate or settle, and could divert management attention away from the execution of our business plan. If we were found to have infringed the proprietary rights of others, we could be subject to substantial damages or an injunction preventing us from conducting our business.

If we are unable to attract and retain key personnel, our business could be harmed.

If any of our key employees were to leave, we could face substantial difficulty in hiring qualified successors and could experience a loss in productivity while any successor obtains the necessary training and experience. Our employment relationships are at-will and we have had key employees leave in the past. We cannot assure you that one or more key employees will not leave in the future. We intend to continue to hire additional highly qualified personnel, including software engineers and sales personnel, but may not be able to attract, assimilate or retain qualified personnel in the future. Any failure to attract, integrate, motivate and retain these employees could harm our business.

Our business may be affected by government regulations.

Extensive regulation by federal, state, and foreign regulatory agencies could adversely affect us in ways that are difficult for us to predict. In addition, our business may also be adversely affected by: i) the imposition of tariffs, duties and other import restrictions on goods and services we purchase from non-domestic suppliers; or ii) by the imposition of export restrictions on products we sell internationally. Changes in current or future laws or regulations, in the United States or elsewhere, could seriously harm our business.

Adverse economic conditions could harm our business.

Unfavorable changes in economic conditions, including recessions, inflation, turmoil in financial markets, or other changes in economic conditions, could harm our business, results of operations, and financial conditions as a result of:

- reduced demand for our products;
- increased risk of order cancellations or delays;
- increased pressure on the prices for our products;
- greater difficulty in collecting accounts receivable; and
- risks to our liquidity, including the possibility that we might not have access to our cash when needed.

We are unable to predict the timing, duration, and severity of any such adverse economic conditions in the U.S. and other countries, but the longer the duration, the greater the risks we face in operating our business.

We may make acquisitions of companies.

We may make acquisitions of companies that offer complementary products, services and technologies. Any acquisitions we may complete involve a number of risks, including the risks of assimilating the operations and personnel of acquired companies, realizing the value of the acquired assets relative to the price paid, distraction of management from our ongoing businesses and potential product disruptions associated with the sale of the acquired company's products. These factors could have a material adverse effect on our business, financial condition, operating results and cash flows. The consideration we pay for any future acquisitions could include our stock. As a result, future acquisitions could cause dilution to existing shareholders and to earnings per share.

We may have additional tax liabilities.

We are subject to income taxes in the United States. Significant judgments are required in determining our provisions for income taxes. In the course of preparing our tax provisions and returns, we must make calculations where the ultimate tax determination may be uncertain. Our tax returns are subject to examination by the Internal Revenue Service ("IRS") and state tax authorities. There can be no assurance as to the outcome of these examinations. If the ultimate determination of taxes owed is for an amount in excess of amounts previously accrued, our operating results, cash flows, and financial condition could be adversely affected.

The market price of our common stock has been and may continue to be subject to wide fluctuations, and this may make it difficult for shareholders to resell the common stock when they want or at prices they find attractive.

The market price of our common stock, like that of other technology companies, is volatile and is subject to wide fluctuations in response to a variety of factors, including:

- quarterly variations in operating results;
- announcements of technological innovations or new products by us or our competitors,
- changes in customer relationships, such as the loss of a key customer;
- recruitment or departure of key personnel;
- corporate actions we may initiate, such as acquisitions, stock sales or repurchases, dividend declarations, or corporate reorganizations; and
- other events or factors.

Our stock price may also be affected by broader market trends unrelated to our performance. As a result, purchasers of our common stock may be unable at any given time to sell their shares at or above the price they paid for them. Moreover, companies that have experienced volatility in the market price of their stock often are subject to securities class action litigation. If we were the subject of such litigation, it could result in substantial costs and divert management's attention and resources.

If we are unable to maintain effective internal controls over financial reporting, investors could lose confidence in the reliability of our financial statements, which could result in a decline in the price of our common stock.

As a public company, we are required to enhance and test our financial, internal and management control systems to meet obligations imposed by the Sarbanes-Oxley Act of 2002. Consistent with the Sarbanes-Oxley Act and the rules and regulations of the SEC, management's assessment of our internal controls over financial reporting and the audit opinion of our independent registered accounting firm as to the effectiveness of our controls is required in connection with our filing of our Annual Report on Form 10-K. If we are unable to identify, implement and conclude that we have effective internal controls over financial reporting or if our independent auditors are unable to conclude that our internal controls over financial reporting are effective, investors could lose confidence in the reliability of our financial statements, which could result in a decrease in the value of our common stock. Our assessment of our internal controls over financial reporting may also uncover weaknesses or other issues with these controls that could also result in adverse investor reaction.

We must make judgments in the process of preparing our financial statements.

We prepare our financial statements in accordance with generally accepted accounting principles and certain critical accounting policies that are relevant to our business. The application of these principles and policies requires us to make significant judgments and estimates. In the event that our judgments and estimates differ from actual results, we may have to change them, which could materially affect our financial position and results of operations.

Moreover, accounting standards have been subject to rapid change and evolving interpretations by accounting standards setting organizations over the past few years. The implementation of new accounting standards requires us to interpret and apply them appropriately. If our current interpretations or applications are later found to be incorrect, we may have to restate our financial statements and the price of our stock could decline.

ITEM 1B. Unresolved Staff Comments

Not applicable.

ITEM 2. PROPERTIES

We believe that our existing facilities are adequate for our current needs and that additional space sufficient to meet our needs for the foreseeable future will be available on reasonable terms. We currently occupy approximately 72,000 square feet of office space in Bedford, Massachusetts, which serves as our headquarters. This site is used for our research and development, sales and marketing, and administrative activities. We own this facility.

ITEM 3. LEGAL PROCEEDINGS

From time to time we are involved in litigation incidental to the conduct of our business. We are not party to any lawsuit or proceeding that, in our opinion, is likely to seriously harm our business.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Our common stock is the only class of stock we have outstanding, and it trades on the Nasdaq Global Market under the symbol AWRE. The following table sets forth the high and the low sales prices of our common stock as reported on the Nasdaq Global Market for the periods indicated from January 1, 2015 to December 31, 2016.

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
2016				
High	$ 4.13	$ 4.41	$ 5.90	$ 6.70
Low	2.81	3.58	3.46	4.90
2015				
High	$ 5.19	$ 4.50	$ 4.17	$ 3.46
Low	4.35	3.83	2.82	2.86

As of February 3, 2017, we had approximately 90 shareholders of record. This number does not include shareholders from whom shares were held in a "nominee" or "street" name. We paid no dividends in 2016 and 2015. In 2014, we paid a special cash dividend of $1.75 per share on July 24, 2014. We anticipate that we will continue to reinvest any earnings to finance future operations although we may also pay additional special cash dividends if our board of directors deems it appropriate.

We did not sell any equity securities that were not registered under the Securities Act of 1933 during the three months ended December 31, 2016.

Issuer Purchases of Equity Securities

Period	(a) Total Number of Shares Purchased	(b) Average Price Paid per Share	(c) Total Number of Shares Purchased as Part of Publicly	(d) Maximum Number (or Approximate Dollar Value) of Shares That May Yet Be

			Announced Plans or Programs (1)	Purchased Under the Plans or Programs
October 2016	8,200	$ 5.27	8,200	-
November 2016	189,879	$ 5.58	189,879	-
December 2016	65,300	$ 5.98	65,300	$ 6,344,645

(1) On April 26, 2016, we issued a press release announcing that our board of directors had approved the repurchase of up to $10,000,000 of our common stock from time to time through December 31, 2017. During the three months ended December 31, 2016, we purchased 263,379 shares under this plan at an aggregate purchase price of $1,492,371.

Performance Graph

The following stock performance graph compares the performance of Aware's cumulative stockholder return with that of a broad market index, the Nasdaq Composite Index, and a published industry index, the RDG Technology Composite Index. The cumulative stockholder returns for shares of Aware's common stock and for the market and industry indices are calculated assuming $100 was invested on December 31, 2011. Aware paid special cash dividends of $2.95, $0.00, $1.75, $0.00, and $0.00 per share in 2012, 2013, 2014, 2015 and 2016, respectively. The performance of the market and industry indices is shown on a total return, or dividend reinvested, basis.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*
Among Aware, Inc., the NASDAQ Composite Index
and the RDG Technology Composite Index

*$100 invested on 12/31/11 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.

	Value of Investment ($)					
	12/31/11	12/31/12	12/31/13	12/31/14	12/31/15	12/31/16
Aware, Inc.	$100.00	$291.26	$324.74	$325.75	$233.91	$437.68
Nasdaq Composite Index	100.00	116.41	165.47	188.69	200.32	216.54
RDG Technology Composite Index	100.00	114.61	152.95	178.50	183.08	206.81

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ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial and operating data set forth below with respect to our consolidated financial statements for the fiscal years ended December 31, 2016, 2015, and 2014 are derived from the consolidated financial statements included elsewhere in this Form 10-K. The data for fiscal years ended December 31, 2013 and 2012 are derived from previously filed consolidated financial statements. The data set forth below should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations," our historical consolidated financial statements, and the related notes to the consolidated financial statements, which can be found in Item 7 and Item 8.

Year ended December 31,	2016	2015	2014	2013	2012
	(in thousands, except per share data)				
Statements of Comprehensive Income Data					
Revenue	$21,566	$19,621	$23,720	$19,357	$17,304
Patent related income	809	43	2,127	780	87,515
Operating income	5,908	3,915	7,089	5,318	92,558
Income from continuing operations	4,103	4,614	4,583	3,752	72,383
Loss from discontinued operations, net of income taxes	-	-	-	(1,156)	(76)
Net income	4,103	4,614	4,583	2,596	72,307
Net income per share – basic	$0.18	$0.20	$0.20	$0.12	$3.32
Net income per share – diluted	$0.18	$0.20	$0.20	$0.11	$3.28
Balance Sheet Data					
Cash and cash equivalents	$51,913	$51,232	$43,985	$72,660	$71,074
Working capital	51,265	49,151	44,745	75,760	73,358
Total assets	61,984	63,619	55,893	89,329	85,854
Total liabilities	4,143	7,438	3,504	4,179	3,958
Total stockholders' equity	57,841	56,181	52,389	85,150	81,896

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

RESULTS OF OPERATIONS

The following table sets forth, for the years indicated, certain line items from our consolidated statements of income and comprehensive income stated as a percentage of total revenue:

	Year ended December 31,		
Revenue:	2016	2015	2014
Software licenses	65 %	51 %	36 %
Software maintenance	24	24	18
Services	8	17	22
Hardware	2	6	21
Royalties	1	2	3
Total revenue	100	100	100
Costs and expenses:			
Cost of software licenses	5	-	-
Cost of services	4	9	10
Cost of hardware	1	4	15
Research and development	32	29	23
Selling and marketing	19	20	16
General and administrative	15	18	15
Total costs and expenses	76	80	79
Patent related income	4	-	9
Operating income	28	20	30
Other income (expense)	-	-	-
Interest income	1	1	-
Income before provision for income taxes	29	21	30
Provision for (benefit from) income taxes	10	(3)	11
Net income	19 %	24 %	19 %

Summary of Operations

We are primarily engaged in the development and sale of biometrics products and services. Our software products are used in government and commercial biometrics systems to identify or authenticate people. Principal government applications of biometrics systems include border control, visitor screening, law enforcement, national defense, intelligence, secure credentialing, access control, and background checks. Principal commercial applications include: i) user authentication for login and access to mobile devices, computers, networks, and software programs; ii) user authentication for financial transactions and purchases (online and in-person); iii) physical access control to buildings, and iv) screening and background checks of prospective employees and customers. We sell our software and services globally through systems integrators and OEMs, and directly to end user customers. We also derive a minor portion of our revenue from the sale of imaging software licenses to OEMs and systems integrators that incorporate our software into medical imaging products and medical systems.

Summary of Financial Results

We used revenue and operating income to summarize financial results over the past three years as we believe these measurements are the most meaningful way to understand our operating performance.

2016 compared to 2015

Revenue and operating income in 2016 were $21.6 million and $5.9 million, respectively, which compared to revenue and operating income in 2015 of $19.6 million and $3.9 million, respectively.

Revenue increased by $2.0 million in 2016 primarily as a result of higher license revenue for biometrics and imaging software products. Higher biometrics product license sales were driven by three large sales to: i) the United States Marine Corps (“USMC”), ii) the United States Navy (“Navy”), and iii) a systems integrator for a U.S. government end user customer. Higher imaging product license sales were related to a $4.5 million license sale in 2015 that we recognized over the period October 2015 to October 2016.

Higher software license revenue was partially offset by lower services and hardware revenue. Services revenue declined because we completed significant projects with commercial and government customers in 2015 that were not replaced with projects of a similar size. Hardware revenue declined because the Navy completed the bulk of its hardware purchases in 2015.

Operating income increased by $2.0 million in 2016 because: i) the $2.0 million revenue increase resulted in $1.2 million more operating income; and ii) patent related income increased by $0.8 million.

2015 compared to 2014

Revenue and operating income in 2015 were $19.6 million and $3.9 million, respectively, which compared to revenue and operating income in 2014 of $23.7 million and $7.1 million, respectively.

Revenue decreased by $4.1 million in 2015 primarily as a result of $5.8 million of lower revenue from the Navy and the USMC. Lower revenue from the Navy was primarily due to lower shipments of hardware, whereas lower revenue from the USMC was due to the conclusion of the primary phase of a software development project. The decline in Navy and USMC revenue was partially offset by $1.7 million of higher net revenue from sales to commercial

customers and a large imaging software license sale.

Operating income decreased by $3.2 million in 2015 because: i) the $4.1 million revenue decline resulted in $1.1 million less operating income; and ii) patent related income decreased by $2.1 million.

Software Licenses

Software licenses consist of revenue from the sale of biometrics and imaging software products. Software licenses sold to the Navy and USMC may also include third party software bundled with Aware software. Sales of software products depend on our ability to win proposals to supply software for biometrics systems projects either directly to end user customers or indirectly through channel partners.

Software license revenue increased 39% from $10.1 million in 2015 to $14.1 million in 2016. As a percentage of total revenue, software license revenue increased from 51% in 2015 to 65% in 2016. The $4.0 million increase in software license revenue was primarily due to: i) a $1.7 million increase in biometrics software license sales; and ii) a $2.3 million increase in imaging software license sales. The reasons for the increases in biometrics and imaging software licenses were:

i) Biometrics software licenses – Biometrics software license sales were $9.6 million in 2016 versus $7.9 in 2015. The increase was primarily due to significant software license sales to: i) the Navy in the first quarter of 2016, ii) the USMC in the second quarter of 2016; and iii) a systems integrator/U.S. government end user in the third quarter of 2016. Revenue increases from these customers were partially offset by lower license revenue from commercial customers and non-U.S. government customers.

Software license revenue from Certificadora Digital S.A. (“Certisign”) and other commercial customers fell short of our expectations. The Certisign service rollout continues, but has not resulted in meaningful revenue to date. License revenue from this arrangement specifically and commercial markets generally has been slow to develop in 2016.

ii) Imaging software licenses – Imaging software license sales were $4.5 million in 2016 versus $2.2 million in 2015. The increase was primarily due to a software license agreement we entered into in October 2015 with a systems integrator. The $4.5 million license fee from that arrangement was recognized over a twelve-month period that ran from October 2015 to October 2016. We recognized $0.9 million and $3.6 million from the sale in 2015 and 2016, respectively. As of December 31, 2016, there was no deferred revenue remaining on the October 2015 imaging license sale.

Software license revenue increased 18% from $8.5 million in 2014 to $10.1 million in 2015. As a percentage of total revenue, software license revenue increased from 36% in 2014 to 51% in 2015. The $1.6 million increase in software license revenue was primarily due to: i) a $0.8 million increase in biometrics software license sales; and ii) a $0.8 million increase in imaging software license sales. The reasons for the increases in biometrics and imaging software licenses were:

i) Biometrics software licenses – Biometrics software license revenue was $7.9 million in 2015 versus $7.1 million in 2014. The $0.8 million increase was primarily due to higher sales to four commercial customers, which was partially offset by lower sales to U.S. government customers.

We derived a significant amount of license revenue in 2015 from Certisign, a Brazilian digital identification company. This revenue was earned during the development phase of a commercial biometrics-as-a-service platform. Certisign began to roll out its biometrics service offering in early 2016 using the system we developed for it. Under our agreement, we will receive license fees based on Certisign’s revenue.

ii) Imaging software licenses – Imaging software license revenue was $2.2 million in 2015 versus $1.4 million in 2014. Historically, we have sold most of our imaging software licenses to OEM customers that incorporate our software into medical imaging products. Revenue to such OEM customers decreased approximately $0.1 million in 2015. The increase in imaging software license revenue in 2015 was due to a large non-OEM transaction we consummated in the fourth quarter of 2015.

In October 2015, we signed an agreement with a systems integrator customer to license our imaging software for inclusion in a U.S. government healthcare management system. The arrangement included a $4.5 million license fee plus a $125,000 software maintenance fee. We delivered the licensed software and the customer paid us in the fourth quarter of 2015. However due to the unique nature of the transaction, we were unable to establish vendor specific objective evidence for the fair value of the maintenance element. Accordingly, we recognized revenue over the twelve-month maintenance period that ran from October 2015 to October 2016 and recorded $0.9 million of license

revenue in 2015.

Software Maintenance

Software maintenance consists of revenue from the sale of software maintenance contracts. Software maintenance contracts entitle customers to receive software support and software updates, if and when they become available, during the term of the contract.

Software maintenance revenue increased 9% from $4.7 million in 2015 to $5.1 million in 2016. As a percentage of total revenue, software maintenance revenue was 24% in 2015 and 2016.

Software maintenance revenue increased 8% from $4.4 million in 2014 to $4.7 million in 2015. As a percentage of total revenue, software maintenance revenue increased from 18% in 2014 to 24% in 2015.

The dollar increase in software maintenance revenue in 2016 and 2015 was primarily due to a base of maintenance revenue from contract renewals from prior periods that grows as we sell maintenance contracts with new licenses in current periods. A majority of our customers purchase software maintenance contracts when they initially purchase software licenses. Since our software is used in active biometrics systems, many of our customers continue to renew their maintenance contracts in subsequent years while systems remain operational.

Services

Services consist of fees we charge to perform software development, integration, installation, and customization services. Similar to software license revenue, services revenue depends on our ability to win biometrics systems projects either directly with government customers or in conjunction with channel partners. Services revenue will fluctuate when we commence new projects and/or when we complete projects that were started in previous periods.

Services decreased 47% from $3.3 million in 2015 to $1.7 million in 2016. As a percentage of total revenue, services decreased from 17% in 2015 to 8% in 2016. The dollar decrease in services revenue was primarily due to lower revenue from: i) commercial customers; and ii) U.S. government customers, including the Navy and USMC. Services backlog of $0.4 million was minimal as of December 31, 2016, which means that services revenue in 2017 is unlikely return to the levels we achieved in 2014 and 2015.

Services decreased 36% from $5.2 million in 2014 to $3.3 million in 2015. As a percentage of total revenue, services decreased from 22% in 2014 to 17% in 2015. The dollar decrease in services revenue was due to a $2.8 million decrease from government customers, which was partially offset by a $0.9 million increase from commercial customers. The dollar decrease in government services revenue was primarily due to lower revenue from U.S. government customers, including the Navy and USMC.

Hardware

Hardware revenue consists of sales of biometrics equipment to the Navy for whom we developed biometrics software. Hardware products sold to this customer integrate hardware purchased from third parties with software from other third parties as well as software from Aware. We evaluated the classification of gross versus net revenue recognition and determined gross recognition was appropriate.

Hardware revenue decreased 71% from $1.1 million in 2015 to $0.3 million in 2016. As a percentage of total revenue, hardware revenue decreased from 6% in 2015 to 2% in 2016. The dollar decrease in hardware revenue was due to the fact that the Navy completed most of its purchases in 2015. Hardware sales in 2016 were for replacement parts only.

Hardware revenue decreased 78% from $4.9 million in 2014 to $1.1 million in 2015. As a percentage of total revenue, hardware revenue decreased from 21% in 2014 to 6% in 2015. The dollar decrease in hardware revenue was due to a decrease in units ordered by the Navy in 2015.

We have no hardware product backlog as of December 31, 2016. We believe that future hardware orders from the Navy may be minimal as we believe it has completed the bulk, if not all, of its purchasing. It is worth noting that our strategy does not include maintaining or growing biometrics hardware revenue. We agreed to provide hardware products as an accommodation to this important customer.

Royalties

Royalties consist primarily of royalty payments we receive under DSL silicon contracts with two customers that incorporate our silicon intellectual property ("IP") in their DSL chipsets. We sold the assets of our DSL IP business in 2009, but we continue to receive royalty payments from these customers. Royalties are reported in continuing operations in accordance with ASC 205-20, Reporting Discontinued Operations, because we have continuing ongoing cash flows from this business.

Royalties decreased 30% from $0.4 million in 2015 to $0.3 million in 2016. As a percentage of total revenue, royalties decreased from 2% in 2015 to 1% in 2016.

Royalties decreased 44% from $0.7 million in 2014 to $0.4 million in 2015. As a percentage of total revenue, royalties decreased from 3% in 2014 to 2% in 2015.

The royalty dollar decrease in 2016 and 2015 was primarily due to lower DSL royalties from both of our licensees. One of our royalty customers reported virtually no royalties in 2016 and the other customer is likely to satisfy its royalty obligation in the next year or two. We do not consider DSL royalties to be a key element of our business and we expect that this revenue will continue to decline in future periods.

Cost of Software Licenses

Cost of software licenses consists primarily of the cost of third party software included in certain software products delivered to the Navy and USMC.

Cost of software licenses increased from zero in 2015 to $1.1 million in 2016. Cost of software licenses as a percentage of software license sales was 8% in 2016, which means that gross margins were 92%. The dollar increase in cost of software licenses was due to the delivery of software to the USMC and Navy that included third party software.

Cost of software licenses were zero in the years ended December 31, 2015 and 2014 as there were no sales of Aware or third party software products to the USMC or Navy during these periods.

Cost of Services

Cost of services consists of engineering costs to perform customer services projects. Such costs primarily include: i) engineering salaries, stock-based compensation, fringe benefits, and facilities; and ii) engineering consultants and contractors.

Cost of services decreased 57% from $1.8 million in 2015 to $0.8 million in 2016. Cost of services as a percentage of services decreased from 54% in 2015 to 44% in 2016, which means that gross margins on services increased from 46% to 56%. The dollar decrease in cost of services was attributable to a decrease in services revenue.

Cost of services decreased 24% from $2.4 million in 2014 to $1.8 million in 2015. Cost of services as a percentage of services increased from 46% in 2014 to 54% in 2015, which means that gross margins on services decreased from 54% to 46%. The dollar decrease in cost of services was attributable to a decrease in services revenue.

Gross margins on services of 56%, 46%, and 54% in 2016, 2015 and 2014, respectively, were a function of: i) the nature of the projects; ii) the level of engineering difficulty and labor hours required to complete project tasks; and iii) how much we were able to charge. Gross margins in these years reflect the profitability mix of customer projects. We expect that gross margins on services will continue to fluctuate in future periods based on the nature, complexity, and pricing of future projects.

Cost of Hardware

Cost of hardware consists primarily of the cost of third party equipment and software included in hardware shipments.

Cost of hardware decreased by 67% from $0.7 million in 2015 to $0.2 million in 2016. Cost of hardware as a percentage of hardware revenue increased from 65% in 2015 to 74% in 2016, which means that product gross margins decreased from 35% in 2015 to 26% in 2016. The 67% dollar decrease in cost of hardware was attributable to a 71% decrease in hardware revenue.

Cost of hardware decreased by 79% from $3.5 million in 2014 to $0.7 million in 2015. Cost of hardware as a percentage of hardware revenue decreased from 71% in 2014 to 65% in 2015, which means that product gross margins increased from 29% in 2014 to 35% in 2015. The dollar decrease in cost of hardware was due to lower unit shipments of hardware products in the current year period compared to the prior year period.

Research and Development Expense

Research and development expense consists of costs for: i) engineering personnel, including salaries, stock-based compensation, fringe benefits, and facilities; ii) engineering consultants and contractors, and iii) other engineering expenses such as supplies, equipment depreciation, dues and memberships and travel. Engineering costs incurred to develop our technology and products are classified as research and development expense. As described in the cost of services section, engineering costs incurred to provide engineering services for customer projects are classified as cost of services, and are not included in research and development expense.

The classification of total engineering costs to research and development expense and cost of services was (in thousands):

	Years ended December 31,		
	2016	2015	2014
Research and development expense	$ 6,938	$ 5,800	$ 5,505
Cost of services	766	1,790	2,359
Total engineering costs	$ 7,704	$ 7,590	$ 7,864

Research and development expense increased 20% from $5.8 million in 2015 to $6.9 million in 2016. As a percentage of total revenue, research and development expense increased from 29% in 2015 to 32% in 2016. The increase in research and development expense was primarily due to the reallocation of engineers from customer services projects to internal development projects.

As the table above indicates, total engineering costs increased from $7.6 million in 2015 to $7.7 million in 2016. The $0.1 million spending increase was due to the following factors: i) higher compensation expenses for engineers as a result of merit increases; ii) higher third party software development costs; and iii) lower contractor expenses due to the termination of contractors working on government service projects. Our engineering headcount declined by one head in 2016. We believe our engineering organization was adequately staffed as of December 31, 2016.

Research and development expense increased 5% from $5.5 million in 2014 to $5.8 million in 2015. As a percentage of total revenue, research and development expense increased from 23% in 2014 to 29% in 2015. The increase in research and development expense was primarily due to the reallocation of engineers from customer services projects to internal development projects.

As the table above indicates, total engineering costs decreased from $7.9 million in 2014 to $7.6 million in 2015. The spending decrease was due to the following factors, which in the aggregate resulted in $0.3 million less expense: i) higher compensation expenses for engineers hired in 2014 for which there was a partial year of expense in 2014 versus a full year in 2015; ii) higher amortization expenses for acquired technology; iii) lower compensation and contractor expenses due to the termination of employees and contractors working on government service projects; iv) lower contractor expenses due to the termination of contractors working on internal development projects; and v) lower recruiting fees due to reduced hiring in 2015. Our engineering headcount declined by one head in 2015.

As we described in the strategy section in Part 1 of this Form 10-K, we intend to introduce new products that will allow us to offer more complete biometrics solutions. We believe this strategy will allow us to sell more software into biometrics systems projects in order to grow our revenue. Our preference is to develop such products internally, however to the extent we are unable to do that, we may purchase or license technologies from third parties. We anticipate that we will continue to focus our future research and development activities on enhancing existing products and developing new products.

In 2016, we engaged a third party software development company to assist us in the development of an important new product. Work commenced in the fourth quarter of 2016 and is expected to be completed in mid 2017. Research and development expense in 2016 included a portion of the cost of this contract and we expect that research and development expenses in the first half of 2017 may include an additional $750,000 depending on the achievement of contract milestones.

Selling and Marketing Expense

Selling and marketing expense primarily consists of costs for: i) sales and marketing personnel, including salaries, sales commissions, stock-based compensation, fringe benefits, travel, and facilities; and ii) advertising and promotion expenses.

Sales and marketing expense increased 5% from $3.9 million in 2015 to $4.1 million in 2016. As a percentage of total revenue, sales and marketing expense decreased from 20% in 2015 to 19% in 2016. The dollar increase in selling and marketing expense was primarily due to increased spending on sales agents, travel and tradeshows, which was partially offset by lower sales commissions and salaries.

Sales and marketing expense increased 5% from $3.7 million in 2014 to $3.9 million in 2015. As a percentage of total revenue, sales and marketing expense increased from 16% in 2014 to 20% in 2015. The dollar increase in selling and marketing expense was primarily due to the addition of one employee in our sales organization which was partially offset by the departure of another employee in the second half of the year. Sales commissions were $35,000 higher in 2015 despite a $4.1 million decrease in total revenue. The small commission increase was due to higher license sales and Brazilian sales agent commissions. There was not a significant reduction of commission expense related to hardware and royalties, which declined by a total of $4.2 million in 2015, because we pay reduced commissions on hardware sales and no commissions on royalties.

General and Administrative Expense

General and administrative expense consists primarily of costs for: i) officers, directors and administrative personnel, including salaries, bonuses, director compensation, stock-based compensation, fringe benefits, and facilities; ii) professional fees, including legal and audit fees; iii) public company expenses; and iv) other administrative expenses, such as insurance costs and bad debt provisions.

General and administrative expense decreased 6% from $3.5 million in 2015 to $3.3 million in 2016. As a percentage of total revenue, general and administrative expense decreased from 18% in 2015 to 15% in 2016. The decrease in general and administrative expense in 2016 was primarily due to lower stock-based compensation and lower legal fees related to corporate matters and patents.

General and administrative expense decreased 5% from $3.7 million in 2014 to $3.5 million in 2015. As a percentage of total revenue, general and administrative expense increased from 15% in 2014 to 18% in 2015. The dollar decrease in general and administrative expense in 2015 was primarily due to lower stock-based compensation and patent filing costs.

Patent Related Income

The composition of patent related income in 2016, 2015 and 2014 was as follows:

Year ended December 31, 2016. We had $0.8 million of income from a patent arrangement in 2016. We entered into an arrangement with an unaffiliated third party in 2010 under which we assigned certain patents in return for royalties on proceeds from patent monetization efforts by the third party. Such third party has engaged in various patent monetization activities, including enforcement, litigation and licensing. The party reported and we recorded $0.8 million of income from this arrangement in the year ended December 31, 2016.

We continue to have a contractual relationship with this third party. However, we are unable to predict how much more income we might receive from this arrangement, if any, because we do not know whether any patent monetization efforts by the third party will be successful.

Year ended December 31, 2015. We had a $43,000 gain on the sale of patent assets in 2015. We sold a portion of our patent portfolio pertaining to home networking technology to an unrelated third party for $50,000. The proceeds from the sale were reduced by $7,000 of transaction costs, which consisted primarily of fees from the law firm that assisted us in the sale. We recorded a gain of $43,000 on the sale.

Future patent sales are likely to be minimal as our remaining patents and patent applications pertain primarily to biometrics and imaging compression. Our current intent is to retain these patents for use in the business.

Year ended December 31, 2014. We had a $2.1 million gain on the sale of patent assets in 2014. We sold a portion of our patent portfolio pertaining to DSL diagnostic technology to an unrelated third party for $2.6 million. The proceeds from the sale were reduced by $0.5 million of transaction costs, which consisted primarily of fees from the law firm that assisted us in the sale. We recorded a gain of $2.1 million on the sale.

Other Income/(Expense)

We did not record any other income or expense in the year ended December 31, 2016. We recorded other income of $12,000 in the year ended December 31, 2015 which consisted of realized gains on sales of high yield bond investments. We recorded other expense of $59,000 in the year ended December 31, 2014, which consisted of realized losses on sales of high yield bond investments.

Interest Income

Interest income increased 85% from $151,000 in 2015 to $280,000 in 2016. The dollar increase was primarily due to higher interest rates.

Interest income decreased 33% from $225,000 in 2014 to $151,000 in 2015. The dollar decrease was primarily due to: i) lower levels of high yield bond investments held in 2015 as compared to 2014; and ii) lower cash balances as a result of a $39.9 million dividend payment in July 2014.

Income Taxes

We are subject to income taxes in the United States and we use estimates in determining our provisions for income taxes. We account for income taxes using the asset and liability method for accounting and reporting income taxes. Deferred tax assets and liabilities are recognized based on temporary differences between the financial reporting and income tax bases of assets and liabilities using statutory rates.

A discussion of income taxes for the years ended December 31, 2016, 2015, and 2014 follows:

Year ended December 31, 2016. Total income tax expense for the year ended December 31, 2016 was $2.1 million. Income tax expense for 2016 was based on the U.S. statutory rate of 34%, increased by state income taxes, and reduced by permanent adjustments and research tax credits.

As of December 31, 2016, we had a total of $1.1 million of deferred tax assets for which we had recorded no valuation allowance. We will continue to assess the level of valuation allowance in future periods. Should evidence regarding the realizability of tax assets change at a future point in time, the valuation allowance will be adjusted accordingly.

In addition to deferred tax assets carried on our balance sheet, we also had net federal research and development credit carryforwards available at December 31, 2016 of $4.8 million. These credits were not recorded as tax assets as they relate to excess stock compensation deductions that may not be recorded as tax assets under current generally accepted accounting principles until the amounts have been utilized to reduce our tax liability. To the extent these assets can be used to reduce taxes, the benefit must be recorded as a reduction to additional paid-in capital. In 2016, we used $0.7 million of these research tax credits to reduce our tax liability. The benefit related to the usage was recorded to additional paid-in capital.

Year ended December 31, 2015. We recorded a benefit from income taxes of $0.5 million for the year ended December 31, 2015. The benefit from income taxes was the result of a $1.9 million tax benefit from the reversal of a reserve for uncertain tax positions, which was partially offset by $1.4 million of income taxes on pre-tax income based on the U.S. statutory rate of 34%, increased by state income taxes, and reduced by research tax credits and permanent adjustments.

The Internal Revenue Service (“IRS”) commenced an examination of our tax return for the year ended December 31, 2012 in September 2014. In July 2015, the IRS notified us that it had completed its examination and that it had no changes to our reported tax. As a result of the completion of the IRS examination, we determined that a $1.9 million reserve for uncertain tax positions we had established on federal research and development credits was no longer required. We reversed the reserve in the third quarter of 2015.

In 2015, we recorded a tax benefit of $0.6 million that reduced our tax liability. This benefit was recorded in equity as it was related to federal and state research tax credits that represented excess stock compensation deductions.

Year ended December 31, 2014. Total income tax expense for the year ended December 31, 2014 was $2.7 million. Income tax expense for 2014 was based on the U.S. statutory rate of 34%, increased by state income taxes, and reduced by Federal research tax credits and permanent adjustments.

In 2014, we recorded a tax benefit of $1.2 million that reduced our tax liability. This benefit was recorded in equity as it was related to federal and state research tax credits that represented excess stock compensation deductions.

LIQUIDITY AND CAPITAL RESOURCES

In recent years, we have financed the company with our cash balances, cash generated from operations, and cash received from the sale of patent assets. Equity financing has not been a meaningful source of financing for us in recent years. Cash flows from operating, investing and financing activities are described below.

Cash flow from operating activities

In the years ended December 31, 2016, 2015, and 2014, our operating activities provided net cash of $3.8 million, $6.7 million, and $6.3 million, respectively. A discussion of cash flow from operating activities for each of the last three years follows:

Year ended December 31, 2016. Cash provided by operating activities was $3.8 million in 2016. Cash provided by operations was primarily the result of $4.1 million of net income and the add back of $1.2 million of non-cash items for depreciation, amortization and stock-based compensation. Cash from these sources was partially offset by $1.5 million of changes in assets and liabilities.

Year ended December 31, 2015. Cash provided by operating activities was $6.7 million in 2015. Cash provided by operations was primarily the result of net income of $4.6 million and the add back of $1.3 million of non-cash items for depreciation, amortization and stock-based compensation. Cash provided by operating activities was reduced by a $1.9 million non-cash item related to the reversal of a reserve for uncertain tax positions that was included as a tax benefit in net income. Cash provided by operating activities also included $2.7 million of cash from changes in assets and liabilities. The most significant change in assets and liabilities was an increase in deferred revenue as a result of a

$4.6 million revenue transaction payment in 2015 for which we deferred $3.7 million of license and maintenance revenue.

Year ended December 31, 2014. Cash provided by operating activities was $6.3 million in 2014. Cash provided by operations was primarily the result of $4.6 million of net income and the add back of $1.4 million of non-cash items for depreciation, amortization and stock-based compensation. Cash provided by operating activities was reduced by a $2.1 million gain on the sale of patent assets that was included in net income, but was included in cash flow from investing activities in the statements of cash flow. Cash provided by operating activities also included $2.4 million of cash from changes in assets and liabilities.

Cash flow from investing activities

In the year ended December 31, 2016, our investing activities used net cash of $0.1 million. In the years ended December 31, 2015 and 2014, our investing activities provided net cash of $0.1 million and $3.4 million, respectively. A discussion of cash flow from investing activities for each of the last three years follows:

Year ended December 31, 2016. Cash used by investing activities of $0.1 million in 2016 consisted of purchases of property and equipment.

Year ended December 31, 2015. Cash provided by investing activities of $0.1 million in 2015 was primarily the result of $0.5 million of proceeds from the sale of investments, which was partially offset by $0.1 million of capital expenditures and $0.3 million used to purchase other assets.

Year ended December 31, 2014. Cash provided by investing activities of $3.4 million in 2014 was primarily the result of $2.1 million of net proceeds from the sale of patent assets and $1.4 million of proceeds from the sale of investments. Cash provided from these sources was partially offset by $0.1 million of capital expenditures.

We have no material commitments for capital expenditures.

Cash flow from financing activities

In the years ended December 31, 2016 and 2014, our financing activities used net cash of $3.0 million and $38.4 million, respectively. In the year ended December 31, 2015, our financing activities provided net cash of $0.4 million. A discussion of cash flow from financing activities for each of the last three years follows:

Year ended December 31, 2016. Cash used in financing activities was $3.0 million in 2016. Financing activity cash usage was primarily the result of $3.7 million used to buy back stock under our stock repurchase program and $136,000 used to pay income taxes for employees who surrendered shares in connection with stock grants. Cash used for these purposes was partially offset by $0.7 million of excess tax benefits from stock-based compensation and $44,000 of cash received from the issuance of stock under our ESPP program.

Year ended December 31, 2015. Cash provided by financing activities was $0.4 million in 2015. Cash provided by financing activities was primarily the result of a $0.6 million tax benefit related to excess stock-based compensation, which was partially offset by $0.2 million used to repurchase stock from employees in connection with stock issuances under a stock grant program.

Year ended December 31, 2014. Cash used by financing activities was $38.4 million in 2014. Financing activity cash usage was primarily the result of a $39.9 million dividend payment and $0.2 million used to repurchase stock from employees in connection with stock issuances under a stock grant program. Cash used by these two items was partially offset by: i) a $1.2 million tax benefit related to excess stock-based compensation; and ii) $0.5 million of proceeds from the exercise of stock options.

At December 31, 2016, we had cash and cash equivalents of $51.9 million and investments of $1.0 million. While we cannot assure you that we will not require additional financing, or that such financing will be available to us, we believe that our cash and cash equivalents and investments will be sufficient to fund our operations for at least the next twelve months.

To date, inflation has not had a material impact on our financial results. There can be no assurance, however, that inflation will not adversely affect our financial results in the future.

OFF-BALANCE SHEET ARRANGEMENTS

We do not currently have any arrangements with unconsolidated entities, such as entities often referred to as structured finance, special purpose entities, or variable interest entities which are often established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. Accordingly, we are not exposed to any financing, liquidity, market or credit risk if we had such relationships.

CONTRACTUAL OBLIGATIONS

We have various contractual obligations affecting our liquidity. The following represents our contractual obligations as of December 31, 2016 (in thousands):

	Payments Due By Period				
Contractual Obligations	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Contracts	$750	$750	$ -	$ -	$ -
Purchase orders	38	38			
Total	$788	$788	$ -	$ -	$ -

CRITICAL ACCOUNTING POLICIES

We consider certain accounting policies related to revenue recognition, stock-based compensation, income taxes, and the allowance for doubtful accounts to be critical policies.

Revenue recognition. We derive revenue from five sources: (i) software licenses; (ii) software maintenance; (iii) software services; iv) hardware; and (v) royalties.

We recognize revenue when there is persuasive evidence of an arrangement, the sales price is fixed or determinable, collection of the related receivable is reasonably assured, and delivery has occurred or services have been rendered. As described below, we make significant judgments during the process of determining revenue for any particular accounting period.

In determining revenue recognition, we assess whether fees associated with revenue transactions are fixed or determinable based on the terms of the contract and based on payment terms. If the fee is not fixed or determinable, we defer the fee and recognize revenue as amounts become due and payable. We assess whether collection is reasonably assured based on a number of factors, including past transaction history with the customer and the credit-worthiness of the customer. If we determine that collection of a fee is not reasonably assured, we defer the fee and recognize revenue at the time collection becomes reasonably assured.

We must also make judgments with respect to the recognition of revenue for multiple element revenue arrangements. We recognize revenue for multiple element arrangements as follows:

Software and software related multiple element arrangements:

We sell software licenses, software maintenance and software services in various combinations of multiple element arrangements. We apply the provisions of ASC 985-605, Software Revenue Recognition, to these arrangements because all the elements are software or software related. The various combinations of multiple element arrangements and our revenue recognition for each are described below:

- When software licenses and maintenance contracts are sold together, we recognize software license revenue upon delivery, provided we have vendor specific objective evidence ("VSOE") for the fair value of the maintenance contract fee, and we recognize the fair value of maintenance contract revenue ratably over the related contract period. When we do not have VSOE for PCS, we recognize the entire arrangement fee over the contractual PCS period.

- When software engineering services and software licenses are sold together, the total fee is generally recognized by applying contract accounting. We have adopted the percentage-of-completion method of contract accounting, and we primarily use an input method (i.e., labor hours) to determine our completion percentage.

- When we sell software licenses, software maintenance, and software services together, revenue is recognized as follows: i) maintenance revenue is separated from the other two elements and is recognized ratably over the related contract period; provided we have VSOE for the fair value of the maintenance element; and ii) the total fee from the software license and engineering service elements is recognized by applying the contract accounting method described in the previous paragraph.

Hardware and software multiple element arrangements:

- We also have a multiple element arrangement with one customer that involves the delivery of hardware, software maintenance, and software services. We determined that these elements qualified as separate units of accounting under ASC 605, Revenue Recognition, because they have value to the customer on a standalone basis. Accordingly, we recognize hardware revenue upon delivery and acceptance by the customer, maintenance revenue ratably over the related contract period, and service revenue as services are delivered.

Our revenue recognition policies are described more fully in Note 2, Summary of Significant Accounting Policies, in the Notes to our Consolidated Financial Statements.

Stock-Based Compensation. We grant stock and stock options to our employees and directors, although stock option grants in recent years have been minimal. We measure stock-based compensation cost at the grant date based on the fair value of the award and recognize it as expense over the applicable vesting period of the award using the straight-line basis.

For stock awards, we determine the fair value of the award by using the fair market value of our stock on the date of grant, provided the number of shares in the grant is fixed on the grant date.

For stock options, we use the Black-Scholes valuation model to estimate the fair value of the award. This valuation model takes into account the exercise price of the award, as well as a variety of significant assumptions. The assumptions used to estimate the fair value of stock options include the expected term, the expected volatility of our stock over the expected term, the risk-free interest rate over the expected term, and our expected annual dividend yield.

Income taxes. As part of the process of preparing our consolidated financial statements we are required to estimate our actual current tax expense. We must also estimate temporary and permanent differences that result from differing treatment of certain items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which are included in our consolidated balance sheet. We must then assess the likelihood that our deferred tax assets will be recovered from future taxable income and to the extent we believe recovery is not likely, we must establish a valuation allowance. To the extent we establish a valuation allowance or increase this allowance in a period for deferred tax assets, which have been recognized, we must include an expense with the tax provision in the statement of operations. Conversely, to the extent we decrease our valuation allowance in a period for deferred tax assets, which have been previously reserved, we must include a tax benefit with the tax provision in the statement of operations.

Significant management judgment is required in determining our provision for income taxes, our deferred tax assets, and any valuation allowance recorded against our net deferred tax assets. Our deferred tax assets primarily relate to temporary differences that result from differing treatment of certain items for tax and accounting purposes. As of December 31, 2016, we had a total of $1.1 million of deferred tax assets for which we had recorded no valuation allowance.

We will continue to assess the level of valuation allowance required in future periods. Should evidence regarding the realizability of tax assets change at a future point in time, the valuation allowance will be adjusted accordingly.

Allowance for doubtful accounts. We make judgments as to our ability to collect outstanding receivables and provide allowances for receivables when collection becomes doubtful. Provisions are made based upon a specific review of all significant outstanding invoices. If the judgments we make to determine the allowance for doubtful accounts do not reflect the future ability to collect outstanding receivables, additional provisions for doubtful accounts may be required.

RECENT ACCOUNTING PRONOUNCEMENTS

FASB ASU No. 2014-09. In May 2014, the FASB issued Accounting Standard Update No. 2014-09, Revenue from Contracts with Customers (Topic 606). The ASU is the result of a joint project by the FASB and the International Accounting Standards Board ("IASB") to clarify the principles for recognizing revenue and to develop a common revenue standard for GAAP and International Financial Reporting Standards ("IFRS") that would: remove inconsistencies and weaknesses, provide a more robust framework for addressing revenue issues, improve comparability of revenue recognition practices across entities, jurisdictions, industries, and capital markets, improve disclosure requirements and resulting financial statements, and simplify the presentation of financial statements. The core principle of the new guidance is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The ASU is effective for annual reporting periods beginning after December 15, 2016. Early adoption is not permitted. On July 9, 2015, the FASB voted to delay the effective date of the new revenue standard by one year, but to permit entities to choose to adopt the standard as of the original effective date.

We have begun to evaluate the effect the new revenue standard will have on our consolidated financial statements and related disclosures, but have not completed our evaluation and implementation process. We intend to complete that process during 2017 and adopt the new standard on January 1, 2018 using the full retrospective adoption transition method. Based on our preliminary evaluations to date, we believe that revenue recognized under the new standard will generally approximate revenue recognized under current GAAP with the exception of the following contracts:

i) 2015 imaging software license contract. We consummated a $4.625 million license contract in October 2015 that included a $4.5 million license fee plus a $125,000 software maintenance fee. We delivered the licensed software and the customer paid us in the fourth quarter of 2015. Under current GAAP, we were unable to establish VSOE for the maintenance element and, as a result we recognized the total fee ratably over the twelve-month period that ran from October 2015 to October 2016. We believe that under the new standard, license revenue from that contract will be recognized in 2015 when control over the software was transferred to the customer. If so, that change would have a material impact on our 2015 and 2016 financial statements.

ii) DSL royalty contracts. Under our current revenue recognition policy, we recognize DSL royalty revenue in the period in which we receive royalty reports, which is typically in the quarter immediately following the quarter in which sales of royalty-bearing products occurred. Under the new standard, we will be required to make estimates of royalties earned in the current period and record royalty revenue based on those estimates.

iii) Minimum license/royalty payment contracts. Some of our revenue contracts require customers to make minimum license/royalty payments. Under current GAAP, we recognize that revenue when those minimum payments become due. Under the new standard, we may have to recognize the net present value of expected minimum payments in the period in which such contracts are signed.

The foregoing observations are subject to change as we complete our implementation process.

FASB ASU No. 2015-17. In November 2015, the FASB issued Accounting Standard Update No. 2015-17, "Balance Sheet Classification of Deferred Taxes," which requires that deferred tax liabilities and assets be classified as noncurrent in a classified statement of financial position to simplify the presentation of deferred income taxes. The standard is effective prospectively for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2017, with early adoption permitted. We elected to early adopt this standard effective January 1, 2016. While the adoption of the standard did not have a material impact on our consolidated balance sheets, it is worth noting that we reclassified $184,000 of deferred tax assets that were previously included in current assets on our December 31, 2015 consolidated balance sheet.

FASB ASU No. 2016-09. In March 2016, the FASB issued Accounting Standard Update No. 2016-09, “Improvements to Employee Share-Based Payment Accounting,” which is intended to simplify various aspects of how share-based payments are accounted for and presented in financial statements. For public companies, the standard is effective prospectively for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2016, with early adoption permitted.

We intend to adopt ASU No. 2016-09 in the first quarter of 2017. As discussed in Note 4, we have research and development tax credit carryforwards related to excess stock compensation deductions. These tax credits are not recorded as deferred tax assets under current accounting standards, however they would be recorded as deferred tax assets with a corresponding credit to retained earnings under ASU No. 2016-09. We are currently evaluating whether we would need to establish a valuation allowance on our tax credit carryforwards which will affect the amount we record as a deferred tax asset in the first quarter of 2017.

FASB ASU No. 2016-13. In June 2016, the FASB issued Accounting Standard Update No. 2016-13, “Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments.” This new standard replaces the incurred loss impairment methodology in current GAAP with a methodology that reflects expected credit losses and requires consideration of a broader range of reasonable and supportable information to inform credit loss estimates. For trade and other receivables, loans, and other financial instruments, entities will be required to use a forward-looking expected loss model rather than the incurred loss model for recognizing credit losses which reflects losses that are probable. Credit losses relating to available-for-sale debt securities will also be recorded through an allowance for credit losses rather than as a reduction in the amortized cost basis of the securities. This standard is effective for fiscal years beginning after December 15, 2019 with early adoption permitted in fiscal years beginning after December 15, 2018. We are currently evaluating the effect this standard will have on our consolidated financial statements and related disclosures.

With the exception of the standards discussed above, there have been no other recently issued accounting pronouncements that are of significance or potential significance to us that we have not adopted as of December 31, 2016.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Our exposure to market risk relates primarily to our investment portfolio, and the effect that changes in interest rates would have on that portfolio. Our investment portfolio at December 31, 2016 consisted of two elements:

1. *Cash and cash equivalents.* As of December 31, 2016, our cash and cash equivalents of $51.9 million were primarily invested in money market funds. The money market funds were invested in high quality, short term financial instruments. Due to the nature, short duration, and professional management of these funds, we do not expect that a general increase in interest rates would result in any material loss.

2. *Investments.* As of December 31, 2016, our investments of $1.0 million were invested in high yield bonds with two corporate debt issuers, which mature in 2017 and 2018. While we are exposed to default risk, the high current yield of these bonds largely mitigates interest rate risk. Therefore, due to the high current yield and the one to two year

life of these instruments, we do not believe that a general increase in interest rates would result in any material loss.

We do not use derivative financial instruments for speculative or trading purposes.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Aware, Inc,

We have audited the accompanying consolidated balance sheets of Aware, Inc. (“the Company”) as of December 31, 2016 and 2015, and the related consolidated statements of income and comprehensive income, stockholders’ equity and cash flows for each of the three years in the period ended December 31, 2016 and the financial statement schedule of Aware, Inc. listed in Item 15(a). We also have audited the Company’s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013. The Company’s management is responsible for these financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management’s Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on these financial statements and an opinion on the Company's internal control over financial reporting based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audit of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (a) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (b) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (c) provide reasonable assurance regarding

prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2016 and 2015, and the results of its operations and its cash flows for the years in the three-year period ended December 31, 2016, in conformity with accounting principles generally accepted in the United States of America, and in our opinion, the related financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, present fairly in all material respects the information set forth therein. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control — Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission in 2013.

/s/ RSM US LLP

Boston, Massachusetts

February 10, 2017

AWARE, INC.

CONSOLIDATED BALANCE SHEETS

(in thousands, except share data)

	December 31,	
	2016	2015
ASSETS		
Current assets:		
Cash and cash equivalents	$51,913	$51,232
Accounts receivable (less allowance for doubtful accounts of $20 at December 31, 2016 and 2015)	3,016	4,743
Prepaid expenses and other current assets	268	483
Total current assets	55,197	56,458
Property and equipment, net	4,634	4,977
Investments	951	869
Deferred tax assets	1,078	999
Other assets	124	316
Total assets	$61,984	$63,619
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$135	$234
Accrued expenses	1,075	952
Accrued income taxes	-	236
Deferred revenue	2,722	5,885
Total current liabilities	3,932	7,307
Long-term deferred revenue	211	131
Commitments and contingent liabilities (Note 8)		
Stockholders' equity:		
Preferred stock, $1.00 par value; 1,000,000 shares authorized, none outstanding	-	-
Common stock, $.01 par value; shares authorized, 70,000,000 in 2016 and 2015; issued and outstanding 22,370,713 in 2016 and 22,935,988 in 2015	224	229
Additional paid-in capital	100,485	102,968
Accumulated other comprehensive loss	(19)	(64)
Accumulated deficit	(42,849)	(46,952)
Total stockholders' equity	57,841	56,181
Total liabilities and stockholders' equity	$61,984	$63,619

The accompanying notes are an integral part of the consolidated financial statements.

AWARE, INC.

CONSOLIDATED STATEMENTS OF INCOME AND COMPREHENSIVE INCOME

(in thousands, except per share data)

	Years ended December 31,		
	2016	2015	2014
Revenue:			
Software licenses	$14,093	$10,113	$8,537
Software maintenance	5,126	4,706	4,351
Services	1,749	3,304	5,173
Hardware	317	1,094	4,933
Royalties	281	404	726
Total revenue	21,566	19,621	23,720
Costs and expenses:			
Cost of software licenses	1,101	-	-
Cost of services	766	1,790	2,359
Cost of hardware	234	717	3,485
Research and development	6,938	5,800	5,505
Selling and marketing	4,142	3,945	3,741
General and administrative	3,286	3,497	3,668
Total costs and expenses	16,467	15,749	18,758
Patent related income	809	43	2,127
Operating income	5,908	3,915	7,089
Other income (expense)	-	12	(59)
Interest income	280	151	225
Income before provision for income taxes	6,188	4,078	7,255
Provision for (benefit from) income taxes	2,085	(536)	2,672
Net income	$4,103	$4,614	$4,583
Net income per share – basic	$0.18	$0.20	$0.20
Net income per share – diluted	$0.18	$0.20	$0.20
Weighted-average shares - basic	22,829	22,899	22,703
Weighted-average shares - diluted	22,898	22,965	22,787
Comprehensive income:			
Net income	$4,103	$4,614	$4,583

Other comprehensive income (net of tax):			
Unrealized gain/(loss) on available for sale securities	45	(35)	96
Comprehensive income	$4,148	$4,579	$4,679

The accompanying notes are an integral part of the consolidated financial statements.

AWARE, INC.

CONSOLIDATED STATEMENTS OF CASH FLOWS

(in thousands)

	Years ended December 31,		
	2016	2015	2014
Cash flows from operating activities:			
Net income	$4,103	$4,614	$4,583
Adjustments to reconcile net income to net cash provided by (used in) operating activities:			
Depreciation and amortization	622	640	541
Stock-based compensation	558	689	915
Reversal of reserve for uncertain tax positions	-	(1,914)	-
Gain on sale of patent assets	-	(43)	(2,127)
Amortization of premium (discount) on investments	(13)	(11)	(3)
(Gain)/loss on sale of investments	-	(12)	59
Deferred tax benefit (expense) on other comprehensive income	(24)	18	(66)
Increase (decrease) from changes in assets and liabilities:			
Accounts receivable	1,727	(1,124)	963
Inventories	-	2	1,599
Prepaid expenses and other current assets	215	(82)	294
Deferred tax assets	(79)	(27)	173
Accounts payable	(99)	(24)	(1,258)
Accrued expenses	123	132	23
Accrued income taxes	(236)	236	-
Deferred revenue	(3,083)	3,590	560
Net cash provided by operating activities	3,814	6,684	6,256
Cash flows from investing activities:			
Purchases of property and equipment	(87)	(127)	(135)
Sales of investments	-	529	1,432
Proceeds from sale of patent assets, net	-	43	2,127
Purchase of other assets	-	(320)	-
Net cash provided by (used in) investing activities	(87)	125	3,424
Cash flows from financing activities:			
Proceeds from issuance of common stock	44	40	508
Payment of dividends	-	-	(39,905)
Excess tax benefits from stock-based compensation	701	554	1,247
Payments made for taxes of employees who surrendered shares related to unrestricted stock	(136)	(156)	(205)
Repurchase of common stock	(3,655)	-	-
Net cash provided by (used in) financing activities	(3,046)	438	(38,355)

Increase/(decrease) in cash and cash equivalents	681	7,247	(28,675)
Cash and cash equivalents, beginning of year	51,232	43,985	72,660
Cash and cash equivalents, end of year	$51,913	$51,232	$43,985
Supplemental disclosure:			
Cash paid for income taxes	$1,553	$571	$1,018

The accompanying notes are an integral part of the consolidated financial statements.

AWARE, INC.

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(in thousands)

	Common Shares	Stock Amount	Additional Paid-In Capital	Accumulated Other Comprehensive Loss	(Accumulated Deficit)	Total Stockholders' Equity
Balance at December 31, 2013	22,574	$ 226	$ 101,293	$ (125)	$ (16,244)	$ 85,150
Exercise of common stock options	118	1	468			469
Issuance of unrestricted stock	141	1	(1)			-
Shares surrendered by employees to pay taxes related to unrestricted stock	(32)	-	(205)			(205)
Issuance of common stock under employee stock purchase plan	8	-	39			39
Stock-based compensation expense			915			915
Tax benefits from stock-based awards			1,247			1,247
Dividend payment					(39,905)	(39,905)
Accumulated other comprehensive loss:						
Unrealized gain on securities				162		162
Deferred tax expense on unrealized gain				(66)		(66)
Net income					4,583	4,583
Balance at December 31, 2014	22,809	228	103,756	(29)	(51,566)	52,389
Issuance of unrestricted stock	152	1	(1)			-
Shares surrendered by employees to pay taxes related to unrestricted stock	(36)	-	(156)			(156)
Issuance of common stock under employee stock purchase plan	11	-	40			40
Reversal of reserve for uncertain tax positions			(1,914)			(1,914)
Stock-based compensation expense			689			689
Tax benefits from stock-based awards			554			554
Accumulated other comprehensive loss:						
Unrealized loss on securities				(53)		(53)
Deferred tax benefit on unrealized loss				18		18
Net income					4,614	4,614
Balance at December 31, 2015	22,936	229	102,968	(64)	(46,952)	56,181

Issuance of unrestricted stock	152	2	(2)			-
Shares surrendered by employees to pay taxes related to unrestricted stock	(36)	-	(136)			(136)
Issuance of common stock under employee stock purchase plan	10	-	44			44
Stock-based compensation expense			558			558
Tax benefits from stock-based awards			701			701
Repurchase of common stock	(691)	(7)	(3,648)			(3,655)
Accumulated other comprehensive loss:						
Unrealized gain on securities				69		69
Deferred tax expense on unrealized gain				(24)		(24)
Net income					4,103	4,103
Balance at December 31, 2016	22,371	$ 224	$ 100,485	$ (19)	$ (42,849)	$ 57,841

The accompanying notes are an integral part of the consolidated financial statements.

AWARE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. NATURE OF BUSINESS

We are a leading provider of software and services to the biometrics industry. Our software products are used in government and commercial biometrics systems, which are capable of determining or verifying an individual's identity. We also offer engineering services related to software customization, integration, and installation, as well as complete systems development. We sell our biometrics software products and services globally through systems integrators, OEMs, and directly to end user customers.

2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation - The consolidated financial statements include the accounts of Aware, Inc. and its subsidiary ("the Company"). All significant intercompany transactions have been eliminated.

Use of Estimates – The preparation of our financial statements in conformity with accounting principles generally accepted in the United States of America requires us 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 amount of revenues and expenses during the reporting period. The most significant estimates included in the financial statements pertain to revenue recognition, reserves for doubtful accounts, useful lives of fixed assets, valuation allowance for deferred income tax assets, and accrued liabilities. Actual results could differ from those estimates.

Fair Value Measurements - The Financial Accounting Standards Board ("FASB") Codification defines fair value, and establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to the unadjusted quoted prices in active markets for identical assets or liabilities (level 1 measurements) and the lowest priority to unobservable inputs (level 3 measurements). The three levels of the fair value hierarchy under the FASB Codification are: i) Level 1 – valuations that are based on quoted prices (unadjusted) in active markets for identical assets or liabilities that the reporting entity has the ability to access at the measurement date; ii) Level 2 – valuations that are based on quoted prices in markets that are not active or for which all significant inputs are observable, either directly or indirectly; and iii) Level 3 – valuations that require inputs that are both significant to the fair value measurement and unobservable.

Cash and cash equivalents, which primarily include money market mutual funds, were $51.9 million and $51.2 million as of December 31, 2016 and December 31, 2015, respectively. We classified our cash equivalents of $49.8 million and $43.0 million as of December 31, 2016 and 2015, respectively, within Level 1 of the fair value hierarchy because they are valued using quoted market prices.

Our investments, which consist of high yield corporate debt securities, are also classified within Level 1 of the fair value hierarchy because they are valued using quoted market prices. Debt securities with maturities greater than one year are classified as long term assets. We categorize our investments as available-for-sale securities, and carry them at fair value in our financial statements. We had $1.0 million and $0.9 million of available-for-sale investments as of December 31, 2016 and December 31, 2015, respectively.

As of December 31, 2016, our assets that are measured at fair value on a recurring basis and whose carrying values approximate their respective fair values include the following (in thousands):

	Fair Value Measurement at December 31, 2016 Using:		
	Quoted Prices in Active Markets for Identical Assets	Significant Other Observable Inputs	Significant Unobservable Inputs
	(Level 1)	(Level 2)	(Level 3)
Corporate debt securities	$ 951	$ -	$ -
Money market funds (included in cash and cash equivalents)	49,839		
Total	$ 50,790	$ -	$ -

AWARE, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

As of December 31, 2015, our assets that are measured at fair value on a recurring basis and whose carrying values approximate their respective fair values include the following (in thousands):

	Fair Value Measurement at December 31, 2015 Using:		
	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Corporate debt securities	$ 869	$ -	$ -