BIO KEY INTERNATIONAL INC
Form 10-K
April 01, 2019

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, 2018

OR

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

For the Transition Period from ___ to ___

Commission file number: 1-13463

BIO-KEY INTERNATIONAL, INC.

(Exact name of registrant as specified in its charter)

DELAWARE	**41-1741861**
(State or other jurisdiction of	(IRS Employer
incorporation or organization)	Identification Number)

3349 HIGHWAY 138, BUILDING A, SUITE E, WALL, NJ 07719

(Address of principal executive offices) (Zip Code)

(732) 359-1100

Registrant's telephone number, including area code.

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

Title of each class	**Name of exchange on which registered**
Common Stock, $0.0001 par value per share	Nasdaq Stock Market

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

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

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

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

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

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

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

Large accelerated filer	Accelerated filer
Non-accelerated filer	Smaller reporting company
	Emerging growth company

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

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

As of June 29, 2018 (the last business day of the registrant’s most recently completed second fiscal quarter), the aggregate market value of the registrant’s common stock held by non-affiliates was approximately $25.2 million based upon the closing price for shares of the registrant’s common stock of $2.65 as reported by the Nasdaq Stock Market on that date.

As of March 29, 2019, the registrant had 13,991,688 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE:

Certain sections of the registrant’s Proxy Statement for its 2019 Annual Meeting of Stockholders are incorporated herein by reference in Part III of this Form 10-K. Such Proxy Statement will be filed with the Securities and Exchange Commission within 120 days of the registrant’s fiscal year ended December 31, 2018.

TABLE OF CONTENTS

	PART I	
Item 1.	Business	1
Item 1A	Risk Factors	8
Item 2	Properties	14
Item 3	Legal Proceedings	14
Item 4	Mine Safety Disclosures	14
	PART II	
Item 5	Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	15
Item 6	Selected Financial Data	15
Item 7	Management's Discussion and Analysis of Financial Condition and Results of Operations	16
Item 8	Financial Statements and Supplementary Data	23
Item 9	Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	24
Item 9A	Controls and Procedures	24
Item 9B	Other Information	24
	PART III	
Item 10	Directors, Executive Officers and Corporate Governance	24
Item 11	Executive Compensation	25
Item 12	Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	25
Item 13	Certain Relationships and Related Transactions, and Director Independence	25
Item 14	Principal Accountant Fees and Services	25
	PART IV	
Item 15	Exhibits and Financial Statement Schedules	25
Item 16	Form 10-K Summary	25
	Signatures	57

PRIVATE SECURITIES LITIGATION REFORM ACT

All statements other than statements of historical facts contained in this Annual Report on Form 10-K, including statements regarding our future financial position, business strategy and plans and objectives of management for future operations, are forward-looking statements. The words “anticipate,” “believe,” “estimate,” “will,” “may,” “future,” “plan “intend” and “expect” and similar expressions generally identify forward-looking statements. Although we believe our plans, intentions, assumptions and expectations reflected in the forward-looking statements are reasonable, we cannot be sure they will be achieved. We caution that it is very difficult to predict the impact of known factors, it is impossible for us to anticipate all factors that could affect our actual results, and that actual results may differ materially and adversely from the forward-looking statements contained herein due to a number of factors, including but not limited to those factors set forth under the caption “Risk Factors” in Item 1A of this Annual Report and other filings with the Securities and Exchange Commission. These factors are not intended to represent a complete list of the general or specific factors that may affect us. It should be recognized that other factors, including general economic factors and business strategies, may be significant, presently or in the future. Except as required by law, we undertake no obligation to update any forward-looking statement, whether as a result of new information, future events or otherwise.

PART I

ITEM 1. BUSINESS

BIO-key International, Inc., a Delaware corporation (the "Company," "BIO-key," "we," or "us), was founded in 1993 to develop and market advanced fingerprint biometric technology and related security software solutions. First incorporated as BBG Engineering, the company was renamed SAC Technologies in 1994 and renamed BIO-key International, Inc. in 2002.

We develop and market advanced fingerprint biometric identification and identity verification technologies, as well as related identity management and credentialing hardware and software solutions. We were pioneers in developing automated, finger identification technology that supplements or compliments other methods of identification and verification, such as personal inspection identification, passwords, tokens, smart cards, ID cards, PKI, credit card, passports, driver's licenses, OTP or other form of possession or knowledge-based credentialing. Additionally, advanced BIO-key® technology has been, and is, used to improve both the accuracy and speed of competing finger-based biometrics.

We have developed what we believe is the most discriminating and effective commercially available finger-based biometric technology. Our primary focus is in marketing and selling this technology into commercial logical and physical privilege entitlement and access control markets. Our primary market focus includes enterprise security, mobile payments and credentialing, healthcare records and data security, among other things. Our secondary focus includes government markets, large scale identity projects such as voter's registration, driver's license, national ID programs, and SIM card registration.

In 2015, we entered into the fingerprint hardware device business through a strategic relationship with China Goldjoy Group ("CGG"), an entity that is affiliated with one of our directors. We market and sell through distributors and directly to end users via Amazon, our SideSwipe™, EcoID™ and SideTouch™ finger readers which can be used on any laptop, tablet or other device which contains a USB port. We also market and sell a variety of biometric and Bluetooth enabled padlocks, luggage locks, and bicycle locks.

We continue to develop advancements in our capabilities, as well as explore potential strategic relationships, including business combinations and acquisitions, which could help us leverage our capability to deliver our solutions. We have built a direct sales force, and also utilize distributors, resellers, integrators and partners with substantial experience in selling technology solutions to government and corporate customers in their respective markets.

Overview

We are a leader in finger-based biometric identification and personal identity verification, as well as authentication-transaction security. Stand-alone, or in partnerships with OEMs, integrators, and solution providers, we provide biometric security solutions to private and public sector customers. We help customers reduce risk by providing the ability to control access to facilities and services, in either logical or physical domains. Our solutions positively identify individuals before granting access to corporate resources, subscribed services, cloud services and applications.

We also develop and distribute hardware components that are used in conjunction with our software, and sell third-party hardware components with our software in various configurations required by our customers. Our products are interoperable with all major fingerprint reader and hardware manufacturers, enabling application developers, value added resellers ("VARs"), and channel partners to integrate our fingerprint biometrics into their applications, while dramatically reducing maintenance, upgrade and life-cycle costs. Our core technology supports interoperability on over 40 different commercially available fingerprint readers and is interoperable across Windows, Linux, and the Android mobile operating systems. This interoperability is unique in the industry, is a key differentiator for our products in the biometric market and, in our opinion, makes our technology more viable than competing technologies and expands the size of the overall market for our products.

In November 2015, we entered into a license agreement with CGG pursuant to which we obtained a license to certain software from CGG, known as FingerQ, which has been integrated into our core WEB-key® platform and can be used in a number of application areas, including mobile payments and personal identity devices for the Asia Pacific markets. In 2016, the software has been integrated into our line of finger scanners that are marketed to consumers and enterprise users worldwide.

During 2016, we continued to develop and expand our consumer footprint for hardware products such as SideSwipe, SideTouch and EcoID by launching on Amazon, making the products available through Microsoft retail stores and developing and promoting our own eCommerce website. SideTouch was featured on HSN in December of 2016.

2017 represented the first year of significant sales generated by our new Asia Pacific division, including a 30,000 unit order for our finger scanners and retail distribution of TouchLock products in 30+ retail stores.

2017 closed with us announcing a $4 million sale with a large telecommunications company. At the time, it was the largest sale in the company history.

2018 saw the emergence of a few trends as customers in financial services and manufacturing began reaching out to us to add a layer of biometric sign-in to their security infrastructure. Use cases included securing the online activity of roving users and shared workstations. Manufacturers turned to us to incorporate workflow efficiencies such as replacing eSignature processes with biometric tracking and reducing the use of long sophisticated passwords with biometric sign-in.

Along with organizations that sought out our solutions to address compliance requirements for multifactor authentication, emerged a new area of opportunity as state board of election organizations were funded to address key security concerns and biometric sign-in became a preferred solution.

In June 2018, our Asia Pacific (APAC) division reached an agreement with Asahi, one of Asia's largest bicycle manufacturers, to market and sell TouchLock Bike. In July 2018, we secured our first TouchLock OEM opportunity after signing an agreement with Aluratek.

In December 2018, we closed out the year by announcing what would become the largest sale in company history to date when we executed an agreement to sell $12 million in software licenses, with $5 million the first year, and an option to renew for $5 million the second year and $2 million the third year. The revenue is being recognized as payments are received and the amount recognized in 2018 was approximately $1.1M.

Products

Finger-based Biometric Identification and Personal Identity Verification

Our biometric identification technology improves both the accuracy and speed of authenticating or identifying individuals, by extracting unique landmarks and other characteristics from a fingerprint and comparing it to the landmarks from previously enrolled fingerprints to determine a match. The technology is built to be scalable and to

handle databases containing millions of fingerprints. We achieve the highest levels of discrimination without requiring any other identifying data (multi-factor) such as a user ID, smart ID cards, or tokens, although our technology can be used in conjunction with such additional factors. Users of our technology have the option of on device or cloud authentication. This flexible authentication option in conjunction with our interoperable capabilities, is another key differentiator of our biometric identification solutions.

We support industry standards, such as SAML, FIDO, BioAPI, and have received National Institute of Standards and Technology independent laboratory certification of our ability to support Homeland Security Presidential Directive #12 (HSPD-12) and ANSI/INCITS-378 templates, as well as validation of our fingerprint match speed and accuracy in large database environments.

Our fingerprint identification algorithm, Vector Segment Technology (VST™), and WEB-key biometric service manager are the core intellectual property behind our full suite of biometric products that include:

ID Director™— is a suite of solutions for integration with CA Technologies / Broadcom's Single Sign-on solution, Oracle's Fusion Middleware SSO, IBM Tivoli Access Manager as well as ISAM and other solutions, utilizing the power and security of WEB-key. This solution provides a simple to implement, custom authentication scheme for companies looking to enhance authentication. ID Director is designed to add a level of security and convenience to the transaction level of any application. Versions of ID Director include:

ID Director for Windows provides enterprise customers the ability to implement and operate a biometric-centric multi-factor authentication (MFA) solutions with their Microsoft Active Directory and Azure Cloud platforms.

ID Director for SAML allows for simplified integration with many applications and identity and access management (IAM) platforms, without coding, including CA Technologies / Broadcom's Single Sign-on, Oracle's IDCS, IBM Tivoli Access Manager ESSO as well as Salesforce, SAP, and other SAML-enabled solutions, leveraging the power and security of WEB-key into a growing set of end user authentication scenarios. This solution provides a simple-to-implement, secure biometric authentication solution for companies looking to enhance authentication across many applications.

ID Director for EPIC adds BIO-key authentication to EPIC EHR environments, simplifying strong authentication for access, as well as meeting electronic prescribing regulations for authentication.

Vector Segment Technology SDK (VST)—Our biometric software development kit ("SDK") provides developers with the ability to incorporate our biometric capabilities into their respective product offerings or infrastructure. VST is available as a low level SDK for incorporation into any application architecture to increase security while not sacrificing convenience. VST runs on Windows and Linux as well as within WEB-key® on iOS and Android systems.

Intelligent Image Indexing®—Our biometric identification solution offers both large-scale one-to-many and one-to-one user identification. This solution enables customers to perform false alias and fast entry checks, including preventing fraudulent access to systems and privileges. Intelligent image indexing scales identification capabilities from thousands to millions of users. The solution runs on commercially available hardware making it scalable for any size system.

Biometric Service Provider—We provide support for the BioAPI (a standards-based solution meeting worldwide needs) for a compliant interface to applications using biometrics for verification and identification. We enhance the traditional use of BioAPI by adding 64-bit support and other advanced features, supporting identification calls and also providing a single user interface for multiple fingerprint readers.

In 2015, Microsoft announced native support for biometrics in the Windows 8.1 and Windows 10 Operating platforms as well as Office 2016. With Microsoft Hello, any user can replace their PIN or password to access their device without any special software downloads by using our finger scanners, SideSwipe, SideTouch and EcoID, which are plug and play compatible with the Microsoft platforms. We have been the preferred partner, in particular at the Microsoft "Ignite your Business" Windows 10 and Office 2016 launch events, which has generated a number opportunities for both our hardware and software offerings. In 2016, our finger scanners were tested and qualified by Microsoft, then introduced and are sold in the Microsoft stores nationwide, as well as through their on-line channel.

At the Consumer Electronics Show 2017, we introduced a number of new products. These included TouchLock, fingerprint biometric and Bluetooth enabled padlocks, FreePass, a wearable, mobile USB fingerprint reader, Q-180 Touch, a Micro USB compatible fingerprint reader for Android devices, and SidePass, a compact, square, touch reader for Windows devices. We are currently distributing these products in both the Asia Pacific and domestic markets.

In 2018 we continued to invest and grow our relationship with Microsoft. The 2018 Ignite your Business event included Microsoft hosting an exclusive BIO-key demonstration kiosk within their event showcase.

We attended CES in 2018 and in 2019 and expanded our presence to increase awareness for TouchLock and capture newly emerging OEM opportunities with Fortune 500 customers.

In 2018, we also introduced OmniPass Consumer, a secure biometric-enabled application to manage multiple passwords for online apps, services or accounts.

Authentication Transaction Security

Our authentication-transaction security technology, WEB-key®, provides the ability to conduct identification and identity verification transactions in potentially unsecure environments, including the World Wide Web or in off-site cloud environments.

WEB-key makes cloud-based biometric user-authentication viable and eliminates technology constraints on online service providers, who are otherwise dependent on handset provider hardware and software platform decisions. It extends all features and functionalities of the VST algorithm to customers looking to add an enhanced level of security to their thin client and client/server applications. WEB-key is currently supported by both Windows and Linux operating systems. Clients are available on Windows and Android operating systems.

Intellectual Property Rights

We develop and own significant intellectual property and believe that our intellectual property is fundamental to our biometric operation:

Patents

We own patented technologies and trade secrets developed or acquired by us.

In May 2005, the U.S. Patent & Trademark Office issued patent 6,895,104 for our Vector Segment fingerprint technology (VST), our core biometric analysis and identification technology. With the payment of all maintenance fees, this patent will expire on March 4, 2023.

On October 3, 2006, we announced that our patent for a biometric authentication security framework had been granted by the U.S. Patent & Trademark Office. The patent No. 7,117,356 was issued to us for a biometric authentication security framework that enhances commercial and civil biometric use. Our authentication security framework protects privacy and security of cloud or network-based authentications while also facilitates ease of use of biometric systems. The technology that this patent is based on is the foundation for the authentication security incorporated in our WEB-key product line. WEB-key is a mature enterprise authentication solution that functions in a wide variety of application environments. The solution supports a variety of implementation alternatives including card technologies for “two-factor” authentication and also supports “single-factor” authentication. Partners and customers implementing our WEB-key software to provide convenient and secure user identity include a number of institutions including the Allscripts Healthcare Solutions, Computer Associates Site Minder, Oracle Access Manager and many other enterprise and solutions-based systems. With the payment of all maintenance fees, this patent will expire on May 20, 2023.

On December 26, 2006, we were issued US patent No. 7,155,040 covering our unique image processing technology, which is critical for enhancing information used in the extraction of biometric minutiae. The issued patent protects a critical part of an innovative four-phase image enhancement process developed by us. With the payment of all maintenance fees, this patent will expire on January 29, 2025.

On April 15, 2008, we were issued US patent No. 7,359,553 covering our image enhancement and data extraction core algorithm components. The solution protected under this patent provides the capability to quickly and accurately transform a fingerprint image into a computer image that can be analyzed to determine the critical data elements. With the payment of all maintenance fees, this patent will expire on January 3, 2025.

On August 19, 2008, we were issued US patent No. 7,415,605 for our “Biometric Identification Network Security” method. The solution protected under this patent provides a defense against hackers and system attacks, while leveraging the industry standard Trusted Platform Module (TPM) specification for encryption key management. With the payment of all maintenance fees, this patent will expire on May 20, 2023.

On November 18, 2008, we were issued US patent No. 7,454,624 for our “Match Template Protection within a Biometric Security System” method. The solution protected under this patent limits the scope of enrollment templates usage and also eliminates the need for revocation or encryption processes, which can be expensive and time consuming. With the payment of all maintenance fees, this patent will expire on May 17, 2025.

On March 10, 2009, we were issued US patent No. 7,502,938 for our “Trusted Biometric Device” which covers a simple, yet secure method of protecting a user’s biometric information. It covers the transmission of information from the point the information is collected at the biometric reader until the data reaches the computer or device that is authenticating the user’s identity. With the payment of all maintenance fees, this patent will expire on October 25, 2025.

On May 26, 2009, we were issued US patent No. 7,539,331 for our “Image Identification System” method for improving the performance and reliability of image analysis within an image identification system. With the payment of all maintenance fees, this patent will expire on March 22, 2022.

On November 8, 2011, we were issued US Patent No. 8,055,027 for our “Generation of Directional Information in the Context of Image Processing” method for image enhancement and processing. With the payment of all maintenance fees, this patent will expire on October 10, 2027.

On July 3, 2012, we were issued US Patent No. 8,214,652 for our “Biometric Identification Network Security”, an expanded method of network and related network authentication security systems utilizing hardware-based support for encryption and key management for authentication purposes. With the payment of all maintenance fees, this patent will expire on April 24, 2024.

On May 3, 2017, we were issued US Patent No. 9,646,146 for our “Utilization of Biometric Data”, a method enables existing small area sensors to capture substantially more fingerprint surface area, leading to a higher degree of accuracy when performing a match. With the payment of all maintenance fees, this patent will expire on March 6, 2035.

On June 19, 2018 we were issued U.S. Patent No. 10,002,244 for our “Utilization of Biometric Data” to allow continuous, passive User authentication on a mobile device.

On July 27, 2018 we were issued U.S. Patent No. 10,025,831 for “Adaptive Short Lists and Acceleration of Biometric Database Search”, a method to quickly and iteratively search a database of biometric data.

We have also been granted parallel patents to the US Patent portfolio to certain of our patents in many foreign countries offering protection of our intellectual property rights around the world.

Licensed Technology

In the fourth quarter of 2015, we entered into a license agreement with affiliates of CGG. The license agreement provides for the grant to our subsidiary, BIO-key Hong Kong Limited (“BIO-key Hong Kong”), of a perpetual, irrevocable, exclusive, worldwide, fully-paid license to all software and documentation regarding the software code, toolkit, electronic libraries and related technology currently known as or offered under the Finger Q name, together with perpetual license under all related patents held by the licensors and any other intellectual property rights owned by the licensors related to the forgoing software. This portfolio includes 16 patents focused on, among other things, mobile payment systems and mobile payment methods based on biometric authentication as well finger print authentication systems and a finger print authentication method based on near field communication (“NFC”). The license agreement grants us the exclusive right to reproduce, create derivative works and distribute copies of the FingerQ software and documentation, create new FingerQ related products, and grant sublicenses of the licensed technology to end users. In addition, in the event the licensors make any derivatives or improvement in the FingerQ software or make any product or service that may compete with or which includes functionality similar to the FingerQ technology, they are required to license such derivative, improvement, product or service to us on the terms set forth in the license agreement at no additional charge. The license arrangement also allows us to create new, innovative solutions to address the growing demand for secure mobile transactions.

Trademarks

We have registered our trademarks “BIO-key”, “True User Identification”, “Intelligent Image Indexing”, “WEB-key”, “SideSwipe, “EcoID” and The Biometric of Things with the U.S. Patent & Trademark Office, as well as many foreign countries, protecting our companies name and key technology offering names.

Copyrights and trade secrets

We take measures to ensure copyright and license protection for our software releases prior to distribution. When possible, the software is licensed in an attempt to ensure that only licensed and activated software functions to its full

potential. We also take measures to protect the confidentiality of our trade secrets.

Markets

Identity Management, User Authentication, Privilege Entitlement and Access Control

Our products simplify the authentication process for enterprise users and consumers, while raising security to the highest levels of assurance. This allows our customers to meet new, stronger authentication requirements and security best practices across many industries, while delivering a superior end-user experience. Customers use our products to reduce risk of theft, fraud, loss, account takeover attacks, and unauthorized account sharing by limiting access to valuable assets, privileges, data, services, networks and places to only authorized individuals. Our products provide stronger identity binding and a superior user experience versus traditional credentialing systems, which utilize a physical or knowledge-based electronic credential to authenticate the holder, but fail to authenticate the actual user in addition to the token. Nearly every enterprise and public sector has seen a shift in the requirement for stronger authentication, and both NIST and industry thought leaders such as Microsoft have encouraged entities to enhance their security posture by implementing stronger 2-factor (2FA) or multi-factor authentication (MFA). Our products help organizations to meet their strong authentication goals, with a sign in process that end users prefer. In our opinion, the market for advanced user authentication, including fingerprint biometrics, extends to nearly every industry segment. We believe the market opportunity for our products is massive, global and growing.

Historically, our largest market has been access control within highly regulated industries like government and healthcare. However, we are witnessing a change in the landscape as organizations within all industries and of all sizes are embracing biometric technology as a security and workflow solution. Championed by the millions of users that have been successfully introduced to biometrics by companies such as Apple and Samsung, today’s users have witnessed the security and convenience benefits of biometric technology.

Upon introducing a series of compact fingerprint readers, we saw an immediate increase in inquiries from both large commercial companies seeking an alternative to passwords, and from consumers recognizing that they could use SideSwipe or EcoID to replace their Windows password.

In October 2015, we established BIO-key Hong Kong for purposes of establishing relationships and conducting business is the Asia Pacific Region. Through our Hong Kong subsidiary, we support the growing demand for secure identification and authentication in the region.

We believe there is potential for significant market growth in the following key areas:

- Corporate network access control, corporate campuses, computer networks, and applications.
- Government funded initiatives, including with the state board of elections.
- International government use case applications as prospects see we as a global leader in the biometric technology space as witnessed by our agreement with the Israeli Defense Force, and the Singapore and Dubai Police departments.
- Consumer mobile credentialing, including mobile payments, credit and payment card programs, data and application access, and commercial loyalty programs.
- Demand for BIO-key hardware products from Windows 10 users and Fortune 500 companies.
- Government services and highly regulated industries including, Medicare, Medicaid, Social Security, Drivers Licenses, Campus and School ID, Passports/Visas.
- Growth in the Asia Pacific region.
- Biometric based consumer products.

Business Model

Our business model for 2019 and beyond is focused on the following key areas:

Market Address Gaps in mainstream MFA Approaches

Drivers

The current climate of broad enterprise adoption of MFA to replace passwords, an ongoing upgrade cycle of Microsoft Windows 10, and accompanying moves to Windows Hello for Business, all present broad opportunities for our products to leverage our unique differentiators and exploit the gaps left in existing technology approach.

There are gaps in the existing IAM solution space that provide the opportunity for us to demonstrate the unique business value of our solutions. One of those gaps is the challenge of authenticating users that "rove" among workstations. A second gap is preventing unauthorized account sharing. These gaps represent soft entry points to gain market share by highlighting known shortcomings of the status quo IAM approach.

OEM Customers We will continue to prioritize securing agreements with OEM customers. The history of success supporting NCR, McKesson and LexisNexis provides an established footprint that we intend to build upon. As OEM customers embed our solutions within their products, the customer benefits from the enhanced security and workflow. OEM customers ordering patterns are more predictable and OEM customers generally require lower service and support resourcing. In 2018, we added our first TouchLock OEM customer by signing an agreement with Aluratek.

Highly Regulated Industries Government projects and healthcare, including hospitals, clinics, private practices and blood centers provide a significant opportunity for us. In healthcare, we anticipate that patient identification will emerge as a highly regulated requirement for all healthcare organizations and we are developing our software to accommodate this need. The financial services industry in the U.S. has been slow to adopt biometric authentication while Asia and Europe have been more receptive to incorporating biometrics. We anticipate that the U.S. market will grow rapidly once the first major institution adopts a biometric solution.

Partner Model We remain committed to a partner sales model. In the Identity and Access Management or "IAM" space, we have adjusted our targets to include working with resellers, and are developing a security assertion markup language (SAML) solution for ease of installation purposes. In healthcare, HealthCast and other partners, such as Allscripts, identified and sold our solutions to a number of new customers in 2019.

Microsoft Partnership In November of 2015, we established a partnership with Microsoft initiated by our participation at the "Ignite your Business" Windows 10 – Hello twelve city launch tour. BIO-key was featured as the exclusive biometric technology vendor during the launch and we continue to leverage this unique status.

Hardware Almost immediately after launching SideSwipe, we witnessed an increase in inquiries inspiring us to develop a series of compact readers with different features and form factors. Hardware has played a significant role in increasing the visibility of our company and has become a catalyst for our software. By offering hardware to customers, we offer a more full and complete solution and eliminate the need for us to engage a hardware vendor on certain projects, which can sometimes inhibit the process and margins. In 2017, we expanded our offerings to include Bluetooth and biometric enabled padlocks, TSA approved luggage locks, and bicycle locks. These products have been well received by consumers and are currently selling in both Asia Pacific and U.S. markets. We are continuing to develop new products and grow our base of distributors and retail outlets for our products.

Research and Development

Our biometric platform is mature, stable, and widely-deployed and we concentrate our research and development efforts on enhancing the functionality, reliability and integration of our current products as well as developing new and innovative products and solutions for providing broader access to the BIO-key user experience, such as ID Director for Windows and ID Director for SAML. Although we believe that our identification technology is one of the most advanced and discriminating fingerprint technologies available today, the markets in which we compete are characterized by rapid technological change and evolving standards. In order to maintain our position in the market, we will continue to upgrade and refine our existing technologies as new standards become relevant to our customers and markets.

We have also licensed mobile platform software from CGG which we have integrated with our core WEB-key offerings and introduced to the Asian markets in 2016. This presents a significant opportunity for us going forward. During the years ended December 31, 2018 and 2017, we spent $1,415,401 and $1,659,875, respectively, on research and development.

Products on Demand (PoD)

Our technology and development team has the expertise to develop customer specific solutions if they are funded. Our strategy to support POD is to utilize internal resources, outsource support services and strategic partners to satisfy unique customer requirements. Our flexible, nimble business model and interoperable capabilities are key differentiators.

Competition

In addition to companies that provide existing commonplace methods of restricting access to facilities and logical access points such as pass cards, PIN numbers, passwords, locks and keys, there are numerous companies involved in the development, manufacturing and marketing of fingerprint biometrics products to commercial, government, law enforcement and prison markets. These companies include, but are not limited to, 3M (Cogent), NEC, and MorphoTrak.

The majority of sales for automated fingerprint identification products in the market to date have been deployed for government agencies, healthcare facilities, and law enforcement applications. The consumer and commercial markets represent areas of significant growth potential for biometrics, led by the use of mobile devices.

The epidemic of security and data breaches reported over the past few years is one of the driving factors for identifying new methods of protecting valuable data. After attempting to create a more sophisticated password or more efficient token or PIN, it has become apparent that each of these methods are easily compromised, and the downside risks are significant.

With respect to competing biometrics technologies, each has its strengths and weaknesses and none has emerged as a market leader:

Fingerprint identification is generally viewed as very accurate, inexpensive and non-intrusive and is the dominant biometric in use today and will be for the foreseeable future;

Palm Vein scanning is expensive, technique-sensitive, and offers mobility challenges;

Iris scanning is viewed as accurate, but the hardware is significantly more expensive; and

Facial recognition can have accuracy limitations and is typically highly dependent on ambient lighting conditions, angle of view, and other factors.

Government Regulations

We are not currently subject to direct regulation by any government agency, other than regulations generally applicable to businesses or related to specific project requirements. In the event of any international sales, we would be subject to various domestic and foreign laws regulating such exports and export activities.

Environmental Regulations

As of the date of this report, we have not incurred any material expenses relating to our compliance with federal, state, or local environmental laws and do not expect to incur any material expenses in the foreseeable future.

Employees, Contractors, and Consultants

As of March 28, 2019, we employed fifteen individuals on a full-time basis as follows: (i) five in engineering, customer support, research and development; (ii) three in finance and administration; and (iii) seven in sales and marketing. We also use the services of three consultants (part-time) who provide engineering and technical services. Additionally, our Hong Kong subsidiary employs three individuals on a full-time basis as follows: (i) one in research and development, (ii) one in finance and administration, (iii) one in sales and marketing. We also use the services of twelve factory contractors (full-time) in China.

ITEM 1A. RISK FACTORS

Set forth below are the risks that we believe are material to our investors. This section contains forward-looking statements. You should refer to the explanation of the qualifications and limitations on forward-looking statements

appearing just before the section captioned "Business" in Item 1. above.

Business and Financial Risks

Based on our lack of sufficient revenue since inception and recurring losses from operations, our independent registered public accounting firm has included an explanatory paragraph in their opinion as to the substantial doubt about our ability to continue as a going concern.

Due to, among other factors, our history of losses and limited revenue, our independent registered public accounting firm has included an explanatory paragraph in their opinion for the year ended December 31, 2018 as to the substantial doubt about our ability to continue as a going concern. Our financial statements have been prepared in accordance with accounting principles generally accepted in the United States, which contemplate that we will continue to operate as a going concern. Our financial statements do not contain any adjustments that might result if we are unable to continue as a going concern.

Since our formation, we have historically not generated significant revenue and have sustained substantial operating losses.

As of December 31, 2018, we had an accumulated deficit of approximately $75.1 million. In order to increase revenue, we have developed a direct sales force and anticipate the need to retain additional sales, marketing and technical support personnel and may need to incur substantial expenses. We cannot assure you that we will be able to secure these necessary resources, that a significant market for our technologies will develop, or that we will be able to achieve our targeted revenue. If we are unable to achieve revenue or raise capital sufficient to cover our ongoing operating expenses, we will be required to scale back operations, including marketing and research initiatives, or in the extreme case, discontinue operations.

Our biometric technology has yet to gain widespread market acceptance and we do not know how large of a market will develop for our technology.

Biometric technology has received only limited market acceptance, particularly in the private sector. Our technology represents a novel security solution and we have not yet generated significant sales. Although recent security concerns relating to identification of individuals and appearance of biometric readers on popular consumer products, including the Apple iPhone, have increased interest in biometrics generally, it remains an undeveloped, evolving market. Biometric 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:

- national or international events which may affect the need for or interest in biometric solutions;
- the performance and reliability of biometric solutions;
- marketing efforts and publicity regarding these solutions;
- public perception regarding privacy concerns;
- costs involved in adopting and integrating biometric solutions;
- proposed or enacted legislation related to privacy of information; and
- competition from non-biometric technologies that provide more affordable, but less robust, authentication (such as tokens and smart cards).

For these reasons, we are uncertain whether our biometric technology will gain widespread acceptance in any commercial markets or that demand will be sufficient to create a market large enough to produce significant revenue or earnings. Our future success depends, in part, upon business customers adopting biometrics generally, and our solution specifically.

Biometric technology is a new approach to Internet security, which must be accepted in order for our WEB-key solution to generate significant revenue.

Our WEB-key authentication initiative represents a new approach to Internet security, which has been adopted on a limited basis by companies that distribute goods, content or software applications over the Internet. The implementation of our WEB-key solution requires the distribution and use of a finger scanning device and integration of database and server side software. Although we believe our solutions provide a higher level of security for information transmitted over the Internet than existing traditional methods, unless business and consumer markets embrace the use of a scanning device and believe the benefits of increased accuracy outweigh implementation costs, our solution will not gain market acceptance.

The market for our solutions is still developing and if the biometrics industry adopts standards or a platform different from our standards or platform, our competitive position would be negatively affected.

The market for identity solutions is still developing. The evolution of this market may result in the development of different technologies and industry standards that are not compatible with our current solutions, products or technologies. Several organizations set standards for biometrics to be used in identification and documentation. Although we believe that our biometric technologies comply with existing standards, these standards may change and any standards adopted could prove disadvantageous to or incompatible with our business model and current or future solutions, products and services.

Our software products may contain defects which will make it more difficult for us to establish and maintain customers.

Although we have completed the development of our core biometric technology, it has only been used by a limited number of business customers. Despite extensive testing during development, our software may contain undetected design faults and software errors, or “bugs” that are discovered only after it has been installed and used by a greater number of customers. Any such defect or error in new or existing software or applications could cause delays in delivering our technology or require design modifications. These could adversely affect our competitive position and cause us to lose potential customers or opportunities. Since our technologies are intended to be utilized to secure physical and electronic access, the effect of any such bugs or delays will likely have a detrimental impact on us. In addition, given that biometric technology generally, and our biometric technology specifically, has yet to gain widespread acceptance in the market, any delays would likely have a more detrimental impact on our business than if we were a more established company.

In order to generate revenue from our biometric products, we are dependent upon independent original equipment manufacturers, system integrators and application developers, which we do not control. As a result, it may be more difficult to generate sales.

We market our technology through licensing arrangements with:

Original equipment manufacturers, system integrators and application developers which develop and market products and applications which can then be sold to end users;

Companies which distribute goods, services or software applications over the Internet

As a technology licensing company, our success will depend upon the ability of these manufacturers and developers to effectively integrate our technology into products and services which they market and sell. We have no control over these licensees and cannot assure you that they have the financial, marketing or technical resources to successfully develop and distribute products or applications acceptable to end users or generate any meaningful revenue for us. These third parties may also offer the products of our competitors to end users. While we have commenced a significant sales and marketing effort, we have only begun to develop a significant distribution channel and may not have the resources or ability to sustain these efforts or generate any meaningful sales.

We face intense competition and may not have the financial and human resources necessary to keep up with rapid technological changes, which may result in our technology becoming obsolete.

The Internet, facility access control, and information security markets are subject to rapid technological change and intense competition. We compete with both established biometric companies and a significant number of startup enterprises as well as providers of more traditional methods of access control. Most of our competitors have substantially greater financial and marketing resources than we do and may independently develop superior technologies, which may result in our technology becoming less competitive or obsolete. We may not be able to keep pace with this change. If we are unable to develop new applications or enhance our existing technology in a timely manner in response to technological changes, we will be unable to compete in our chosen markets. In addition, if one or more other biometric technologies such as voice, face, iris, hand geometry or blood vessel recognition are widely adopted, it would significantly reduce the potential market for our fingerprint identification technology.

We introduced our products in Asian markets in 2016. Our financial performance will be subject to risks associated with changes in the value of the U.S. dollar versus local currencies.

Our primary exposure to movements in foreign currency exchange rates relates to non-U.S. dollar-denominated sales and operating expenses worldwide. Weakening of foreign currencies relative to the U.S. dollar will adversely affect the U.S. dollar value of our foreign currency-denominated sales and earnings, if any, and could lead to us raising international pricing, potentially reducing the demand for our products. In addition, margins on sales of our products in foreign countries and on sales of products that include components obtained from foreign suppliers could be materially adversely affected by foreign currency exchange rate fluctuations.

We depend on key employees and members of our management team, including our Chairman of the Board and Chief Executive Officer and our Chief Technology Officer, in order to achieve our goals. We cannot assure you that we will be able to retain or attract such persons.

Our employment contracts with Michael W. DePasquale, our Chairman of the Board and Chief Executive Officer, and Mira LaCous, our Chief Technology Officer, expire annually, and renew automatically for successive one year periods unless notice of non-renewal is provided by the Company. Although the contracts do not prevent them from resigning, they do contain confidentiality and non-compete clauses, which are intended to prevent them from working for a competitor within one year after leaving our Company. Our success depends on our ability to attract, train and retain employees with expertise in developing, marketing and selling software solutions. In order to successfully market our technology, we will need to retain additional engineering, technical support and marketing personnel. The market for such persons remains highly competitive and our limited financial resources will make it more difficult for us to recruit and retain qualified persons.

We cannot assure you that the intellectual property protection for our core technology provides a sustainable competitive advantage or barrier to entry against our competitors.

Our success and ability to compete is dependent in part upon proprietary rights to our technology. We rely primarily on a combination of patent, copyright and trademark laws, trade secrets and technical measures to protect our propriety rights. We have filed a patent application relating to both the optic technology and biometrics solution components of our technology wherein several claims have been allowed. The U.S. Patent and Trademark Office has issued us a series of patents for our Vector Segment fingerprint technology (VST), and our other core biometric analysis and identification technologies. However, we cannot assure you that we will be able to adequately protect our technology or other intellectual property from misappropriation in the U.S. and abroad. Any patent issued to us could be challenged, invalidated or circumvented or rights granted thereunder may not provide a competitive advantage to us. Furthermore, patent applications that we file may not result in issuance of a patent or, if a patent is issued, the patent may not be issued in a form that is advantageous to us. Despite our efforts to protect our intellectual property rights, others may independently develop similar products, duplicate our products or design around our patents and other rights. In addition, it is difficult to monitor compliance with, and enforce, our intellectual property rights on a worldwide basis in a cost-effective manner. In jurisdictions where foreign laws provide less intellectual property protection than afforded in the U.S. and abroad, our technology or other intellectual property may be compromised, and our business would be materially adversely affected. If any of our proprietary rights are misappropriated or we are forced to defend our intellectual property rights, we will have to incur substantial costs. Such litigation could result in substantial costs and diversion of our resources, including diverting the time and effort of our senior management, and could disrupt our business, as well as have a material adverse effect on our business, prospects, financial condition and results of operations. We can provide no assurance that we will have the financial resources to oppose any actual or threatened infringement by any third party. Furthermore, any patent or copyrights that we may be granted may be held by a court to infringe on the intellectual property rights of others and subject us to the payment of damage awards.

We may be subject to claims with respect to the infringement of intellectual property rights of others, which could result in substantial costs and diversion of our financial and management resources.

Third parties may claim that we are infringing on their intellectual property rights. We may violate the rights of others without our knowledge. We may expose ourselves to additional liability if we agree to indemnify our customers against third party infringement claims. While we know of no basis for any claims of this type, the existence of and ownership of intellectual property can be difficult to verify and we have not made an exhaustive search of all patent filings. Additionally, most patent applications are kept confidential for twelve to eighteen months, or longer, and we would not be aware of potentially conflicting claims that they make. We may become subject to legal proceedings and claims from time to time relating to the intellectual property of others in the ordinary course of our business. If we are found to have violated the intellectual property rights of others, we may be enjoined from using such intellectual property, and we may incur licensing fees or be forced to develop alternative technology or obtain other licenses. In addition, we may incur substantial expenses in defending against these third party infringement claims and be diverted from devoting time to our business and operational issues, regardless of the merits of any such claim.

In addition, in the event that we recruit employees from other technology companies, including certain potential competitors, and these employees are engaged in the development of portions of products which are similar to the development in which they were involved at their former employers, we may become subject to claims that such employees have improperly used or disclosed trade secrets or other proprietary information. If any such claims were to arise in the future, litigation or other dispute resolution procedures might be necessary to retain our ability to offer our current and future services, which could result in substantial costs and diversion of our financial and management resources. Successful infringement or licensing claims against us may result in substantial monetary damages, which may materially disrupt the conduct of our business and have a material adverse effect on our reputation, business, financial condition and results of operations. Even if intellectual property claims brought against us are without merit, they could result in costly and time consuming litigation, and may divert our management and key personnel from operating our business.

If we are unable to effectively protect our intellectual property rights on a worldwide basis, we may not be successful in the international expansion of our business.

Access to worldwide markets depends in part on the strength of our intellectual property portfolio. There can be no assurance that, as our business expands into new areas, we will be able to independently develop the technology, software or know-how necessary to conduct our business or that we can do so without infringing the intellectual property rights of others. To the extent that we have to rely on licensed technology from others, there can be no assurance that we will be able to obtain licenses at all or on terms we consider reasonable. The lack of a necessary license could expose us to claims for damages and/or injunction from third parties, as well as claims for indemnification by our customers in instances where we have a contractual or other legal obligation to indemnify them against damages resulting from infringement claims. With regard to our own intellectual property, we actively enforce and protect our rights. However, there can be no assurance that our efforts will be adequate to prevent the misappropriation or improper use of our protected technology in international markets.

We face inherent product liability or other liability risks that could result in large claims against us.

We have inherent risk of exposure to product liability and other liability claims resulting from the use of our products, especially to the extent customers may depend on our products in public safety situations that may involve physical harm or even death to individuals, as well as exposure to potential loss or damage to property. Despite quality control systems and inspection, there remains an ever-present risk of an accident resulting from a faulty manufacture or maintenance of products, or an act of an agent outside of our or our supplier's control. Even if our products perform properly, we may become subject to claims and costly litigation due to the catastrophic nature of the potential injury and loss. A product liability claim, or other legal claims based on theories including personal injury or wrongful death, made against us could adversely affect operations and financial condition. Although we may have insurance to cover product liability claims, the amount of coverage may not be sufficient.

We expect that we will need to obtain additional financing to execute our business plan over the long-term, which may not be available. If we are unable to raise additional capital or generate significant revenue, we may not be able to continue operations.

We have historically financed our operations through access to the capital markets by issuing secured and convertible debt securities, convertible preferred stock, common stock, and through factoring receivables. We currently require approximately $537,000 per month to conduct our operations, a monthly amount that we have been unable to consistently achieve through revenue generation. During 2018, we generated approximately $4,045,000 of revenue, which is below our average monthly requirements. If we are unable to generate sufficient revenue to cover operating expenses and fund our business plan, we will need to obtain additional third-party financing to (i) conduct the sales, marketing and technical support necessary to execute our plan to substantially grow operations, increase revenue and serve a significant customer base; and (ii) provide working capital. We may, therefore, need to obtain additional financing through the issuance of debt or equity securities. We cannot assure you that we will be able to secure any such additional financing on terms acceptable to us or at all. If we cannot obtain such financing, we will not be able to execute our business plan, will be required to reduce operating expenses, and in the extreme case, discontinue operations.

We may not achieve sustainable profitability with respect to the biometric component of our business if we are unable to maintain, improve our offerings.

We believe that our future business prospects depend in part on our ability to maintain and improve our current services and to develop new ones on a timely basis. Our services will have to achieve market acceptance, maintain technological competitiveness, and meet an expanding range of customer requirements. As a result of the complexities inherent in our service offerings, major new wireless data services and service enhancements require long development and testing periods. We may experience difficulties that could delay or prevent the successful development, introduction or marketing of new services and service enhancements. Additionally, our new services and service enhancements may not achieve market acceptance. If we cannot effectively develop and improve services, we may not be able to recover our fixed costs or otherwise become profitable.

If we fail to adequately manage our resources, it could have a severe negative impact on our financial results or stock price.

We could be subject to fluctuations in technology spending by existing and potential customers. Accordingly, we will have to actively manage expenses in a rapidly changing economic environment. This could require reducing costs during economic downturns and selectively growing in periods of economic expansion. If we do not properly manage our resources in response to these conditions, our results of operations could be negatively impacted.

Our business could be negatively impacted by security threats, including cybersecurity threats, and other disruptions.

As a technology company, we face various security threats, including cybersecurity threats to gain unauthorized access to sensitive information. Although we utilize various procedures and controls to monitor these threats and mitigate our exposure to such threats, there can be no assurance that these procedures and controls will be sufficient in preventing security threats from materializing. If any of these events were to materialize, they could lead to losses of sensitive information, critical infrastructure, personnel or capabilities, essential to our operations and could have a material adverse effect on our reputation, financial position, results of operations, or cash flows.

Cybersecurity attacks in particular are evolving and include but are not limited to, malicious software, attempts to gain unauthorized access to data, and other electronic security breaches that could lead to disruptions in critical systems, unauthorized release of confidential or otherwise protected information and corruption of data. These events could damage our reputation and lead to financial losses from remedial actions, loss of business or potential liability.

Risks Related To Our Common Stock

We have issued a substantial number of securities that are convertible into shares of our common stock which could result in substantial dilution to the ownership interests of our existing shareholders.

As of the date of this report, approximately 5,575,515 shares of our common stock were reserved for issuance upon exercise or conversion of outstanding stock options, and warrants. The exercise or conversion of these securities will result in a significant increase in the number of outstanding shares and substantially dilute the ownership interests of our existing stockholders.

The availability of a substantial number of shares of our common stock for public sale may cause the price of our common stock to decline.

Our most recent registration statement, which was declared effective in October 2018, covers the public resale of 2,559,172 shares of our common stock consisting of shares of common stock underlying warrants issued in our November 2014, September 2015, and August 2018 private offerings. The shares of common stock being offered by the selling security holders represent approximately 18% of our outstanding shares. The availability of these shares for sale to the public, whether or not sales have occurred or are occurring, and the sale of such shares in the public markets could have an adverse effect on the market price of our common stock. Such an adverse effect on the market price would make it more difficult for us to raise additional financing through the sale of equity or equity-related securities in the future at a time and price that we deem reasonable or appropriate.

An active trading market for our common stock may not be sustained.

Although our common stock is listed on the Nasdaq Capital Market, an active trading market for our shares may not be developed and if developed, sustained. If an active market for our common stock is not developed or sustained, it may be difficult for you to sell your shares without depressing the market price for the shares or sell your shares at all. Any inactive trading market for our common stock may also impair our ability to raise capital to continue to fund our operations by selling shares and may impair our ability to acquire other companies or technologies by using our shares as consideration.

If we fail to comply with the continued minimum closing bid requirements of the Nasdaq or other requirements for continued listing, our Common Stock may be delisted and the price of our Common Stock and our ability to access the capital markets could be negatively impacted.

Our common stock is listed for trading on Nasdaq. We must satisfy Nasdaq's continued listing requirements, including, among other things, a minimum closing bid price requirement of $1.00 per share for 30 consecutive business days. A delisting of our common stock from Nasdaq could materially reduce the liquidity of our common stock and result in a corresponding material reduction in the price of our Common Stock. In addition, delisting could harm our ability to raise capital through alternative financing sources on terms acceptable to us, or at all, and may result in the potential loss of confidence by investors, employees and fewer business development opportunities.

We may need to raise additional funds in the future through issuances of securities and such additional funding may be dilutive to stockholders or impose operational restrictions.

We expect that we will need to raise additional capital in the future to help fund our operations through sales of shares of our common stock or securities convertible into shares of our common stock, as well as issuances of debt. Such additional financing may be dilutive to our stockholders, and debt financing, if available, and may involve restrictive covenants which may limit our operating flexibility. If additional capital is raised through the issuance of shares of our common stock or securities convertible into shares of our common stock, the percentage ownership of existing stockholders will be reduced. These stockholders may experience additional dilution in net book value per share and any additional equity securities may have rights, preferences and privileges senior to those of the holders of our common stock.

Because we do not expect to pay dividends for the foreseeable future, investors seeking cash dividends should not purchase our shares of common stock.

We have never declared or paid any cash dividends on our common stock, and we do not anticipate paying any cash dividends on our common stock in the foreseeable future. Our payment of any future dividends will be at the discretion of our board of directors after taking into account various factors, including but not limited to our financial condition, operating results, cash needs, growth plans and the terms of any credit agreements that we may be a party to at the time. Accordingly, investors seeking cash dividends should not purchase shares of our common stock.

Our share ownership is highly concentrated which will limit your ability to influence corporate matters.

Our directors, officers and principal stockholders, beneficially own approximately 54% of our common stock and will continue to have significant influence over the outcome of all matters submitted to the stockholders for approval, including the election of our directors and approval of significant corporate transactions. This concentration of ownership will limit your ability to influence corporate matters, and as a result, actions may be taken that you may not view as beneficial.

Provisions of our certificate of incorporation, bylaws and Delaware law may make a contested takeover of our Company more difficult.

Certain provisions of our certificate of incorporation, bylaws and the General Corporation Law of the State of Delaware ("DGCL") could deter a change in our management or render more difficult an attempt to obtain control of us, even if such a proposal is favored by a majority of our stockholders. For example, we are subject to the provisions of the DGCL that prohibit a public Delaware corporation from engaging in a broad range of business combinations with a person who, together with affiliates and associates, owns 15% or more of the corporation’s outstanding voting shares (an "interested stockholder") for three years after the person became an interested stockholder, unless the business combination is approved in a prescribed manner. Our certificate of incorporation also includes undesignated preferred stock, which may enable our board of directors to discourage an attempt to obtain control of us by means of a tender offer, proxy contest, merger or otherwise. Finally, our bylaws include an advance notice procedure for stockholders to nominate directors or submit proposals at a stockholders meeting. Delaware law and our charter may, therefore, inhibit a takeover.

The trading price of our common stock may be volatile.

The trading price of our shares has from time to time fluctuated widely and in the future may be subject to similar fluctuations. The trading price may be affected by a number of factors including the risk factors set forth in this prospectus as well as our operating results, financial condition, announcements of innovations or new products by us or our competitors, general conditions in the biometrics and access control industries, and other events or factors. We cannot assure you that any of the broker-dealers that currently make a market in our common stock will continue to serve as market makers or have the financial capability to stabilize or support our common stock. A reduction in the number of market makers or the financial capability of any of these market makers could also result in a decrease in the trading volume of and price of our shares. In recent years broad stock market indices, in general, and the securities of technology companies, in particular, have experienced substantial price fluctuations. Such broad market fluctuations may adversely affect the future-trading price of our common stock.

ITEM 2. DESCRIPTION OF PROPERTY

We do not own any real estate. We conduct operations from leased premises in Eagan, Minnesota (5,544 square feet), and Wall, New Jersey (4,517 square feet), as well as in several home-office locations across the country. Internationally, we conduct operations from leased premises in Tsuen Wan, Hong Kong (1,098 square feet), and Jiangmen, China (3,267 square feet).

ITEM 3. LEGAL PROCEEDINGS

From time to time, we may be involved in litigation relating to claims arising out of our operations in the normal course of business. As of the date of this report, we are not a party to any pending lawsuit.

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 currently trades on the Nasdaq Capital Market under the symbol "BKYI".

Holders

As of March 27, 2019, the number of stockholders of record of our common stock was 140.

Dividends

We have not paid any cash dividends on our common stock to date, and have no intention of paying any cash dividends on our common stock in the foreseeable future. The declaration and payment of dividends on our common stock is also subject to the discretion of our Board of Directors and certain limitations imposed under the DGCL. The timing, amount and form of dividends, if any, will depend on, among other things, our results of operations, financial condition, cash requirements and other factors deemed relevant by our Board of Directors.

Common Stock

On November 8, 2018, the Company issued 4,800 shares of common stock to its directors in payment of board fees.

On November 12, 2018, the Company issued 910 shares of common stock to its directors in payment of committee fees.

ITEM 6. SELECTED FINANCIAL DATA

Not Applicable.

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

This Management's Discussion And Analysis Of Financial Condition And Results Of Operations, and other parts of this Report contain forward-looking statements that involve risks and uncertainties. All forward-looking statements included in this Report are based on information available to us on the date hereof, and we assume no obligation to update any such forward-looking statements. Our actual results could differ materially from those anticipated in these forward-looking statements as a result of a number of factors, including those set forth in the section captioned "**RISK FACTORS**" in Item 1A and elsewhere in this Report. The following should be read in conjunction with our audited financial statements included elsewhere herein.

The following Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A") is intended to help you understand the Company. The MD&A is provided as a supplement to and should be read in conjunction with our financial statements and the accompanying notes.

OVERVIEW

We develop and market advanced fingerprint biometric identification and identity verification technologies, as well as related identity management and credentialing fingerprint biometric hardware and software solutions. We were pioneers in developing automated, finger identification technology that supplements or compliments other methods of identification and verification, such as personal inspection identification, passwords, tokens, smart cards, ID cards, PKI, credit card, passports, driver's licenses, OTP or other form of possession or knowledge-based credentialing. Advanced BIO-key technology has been and is used to improve both the accuracy and speed of competing finger-based biometrics. Our solutions are used by many customers in every sector of our economy including government, retail, healthcare and financial services.

In partnerships with OEMs, integrators, and solution providers, we provide biometric software solutions to private and public sector customers. We provide the ability to positively identify and authenticate individuals before granting access to valuable corporate resources, web portals or applications in seconds. Powered by our patented Vector Segment Technology or VST, WEB-key and BSP development kits are fingerprint biometric solutions that provide interoperability with all major reader manufacturers, enabling application developers and integrators to integrate fingerprint biometrics into their applications.

Our biometric identification technology improves both the accuracy and speed of screening individuals, for identification purposes or for personal identity verification, by extracting unique data from a fingerprint and comparing it to existing similar fingerprint data. The technology has been built to be scalable and to handle databases

containing millions of fingerprints. We achieve the highest levels of discrimination without requiring any other identifying data (multi-factor) such as a user ID, smart ID cards, or tokens, although our technology can be used in conjunction with such additional factors. Users of our technology have the option of on device or cloud authentication. This flexible authentication option in conjunction with our interoperable capabilities, is another key differentiator of our biometric identification solutions.

We also develop and distribute hardware components that are used in conjunction with our software, and sell third-party hardware components with our software in various configurations required by our customers. Our products are interoperable with all major fingerprint reader and hardware manufacturers and across Windows, Linux, and the Android mobile operating systems enabling application developers, value added resellers, and channel partners to integrate our fingerprint biometrics into their applications, while dramatically reducing maintenance, upgrade and life-cycle costs. This interoperability is unique in the industry, is a key differentiator for our products in the biometric market and, in our opinion, makes our technology more viable than competing technologies and expands the size of the overall market for our products.

We support industry standards, such as FIDO, BioAPI, and have received National Institute of Standards and Technology independent laboratory certification of our ability to support Homeland Security Presidential Directive #12 (HSPD-12) and ANSI/INCITS-378 templates, as well as validation of our fingerprint match speed and accuracy in large database environments.

We have developed what we believe is the most discriminating and effective commercially available finger-based biometric technology. Our primary focus is in marketing and selling this technology into commercial logical and physical privilege entitlement & access control markets. Our primary market focus includes, among others, enterprise access, mobile payments & credentialing, online payments, and healthcare record and payment data security. Our secondary focus includes government and educational markets.

Products

In 2016, we began to sell through distribution and directly to consumers and commercial users our SideSwipe, SideTouch and EcoID products. SideSwipe, SideTouch and EcoID are stand-alone fingerprint readers that can be used on any laptop, tablet or other device with a USB port. In 2017, we expanded our consumer product line to include biometric and blue tooth enabled pad locks, TSA approved luggage locks, and bicycle locks. In 2018, we introduced OmniPass Consumer, a secure biometric-enabled application to manage multiple passwords for online apps, services or accounts.

In 2015, Microsoft announced native support for biometrics in the Windows 8.1 and Windows 10 Operating platforms as well as Office 2016. With Microsoft Hello, any user can replace their PIN or password to access their device without any special software downloads by using our finger scanners, SideSwipe, SideTouch and EcoID, which are plug and play compatible with the Microsoft platforms. We have been the preferred partner, in particular at the Microsoft "Ignite your Business" Windows 10 and Office 2016 launch events, which has generated a number opportunities for both our hardware and software offerings. In 2016, our finger scanners were tested and qualified by Microsoft, then introduced and are sold in the Microsoft stores nationwide, as well as through their on-line channel.

In 2018 we continued to invest and grow our relationship with Microsoft. The 2018 Ignite your Business event included Microsoft hosting an exclusive BIO-key demonstration kiosk within their event showcase.

STRATEGIC OUTLOOK

Historically, our largest market has been access control within highly regulated industries such as healthcare. However, we believe the mass adoption of advanced smart-phone and hand-held wireless devices have caused commercial demand for advanced user authentication to emerge as viable. The introduction of smart-phone capabilities, like mobile payments and credentialing, could effectively require biometric user authentication on mobile devices to reduce risks of identity theft, payment fraud and other forms of fraud in the mobile or cellular based world wide web. As more services and payment functionalities, such as mobile wallets and near field communication (NFC), migrate to smart-phones, the value and potential risk associated with such systems should grow and drive demand and adoption of advanced user authentication technologies, including fingerprint biometrics and BIO-key solutions.

As devices with onboard fingerprint sensors continue to deploy to consumers, we expect that third party application developers will demand the ability to authenticate users of their respective applications (app's) with the onboard fingerprint biometric. We further believe that authentication will occur on the device itself for potentially low-value, and therefore low-risk, use-transactions and that user authentication for high-value transactions will migrate to the application provider's authentication server, typically located within their supporting technology infrastructure, or Cloud. We have developed our technology to enable, on-device authentication as well as network or cloud-based authentication and believe we may be the only technology vendor capable of providing this flexibility and capability. Our core technology works on over 40 commercially available fingerprint readers, across both Windows and Linux platforms, and Apple iOS and Android mobile operating systems. This interoperability, coupled with the ability to authentic users via the device or cloud, is unique in the industry, provides a key differentiator for us, and in our opinion, makes our technology more viable than competing technologies and expands the size of the overall market for our products.

We believe there is potential for significant market growth in the following key areas:

Corporate network access control, corporate campuses, computer networks, and applications.

Government funded initiatives, including with the state board of elections.

International government use case applications as prospects see we as a global leader in the biometric technology space as witnessed by our agreement with the Israeli Defense Force, and the Singapore and Dubai Police departments.

Consumer mobile credentialing, including mobile payments, credit and payment card programs, data and application access, and commercial loyalty programs.

Demand for BIO-key hardware products from Windows 10 users and Fortune 500 companies.

Government services and highly regulated industries including, Medicare, Medicaid, Social Security, Drivers Licenses, Campus and School ID, Passports/Visas.

Growth in the Asia Pacific region.

Biometric based consumer products.

In the near-term, we expect to grow our business within government services and highly-regulated industries in which we have historically had a strong presence, such as the healthcare industry. We believe that continued heightened security and privacy requirements in these industries will generate increased demand for security solutions, including biometrics. In addition, we expect that the integration of our technology into Windows 10, will accelerate the demand for our computer network log-on solutions and fingerprint readers. Finally, our entry into the Asian market and licensing arrangement with CGG has further expanded our business by opening new markets along with the new and innovative hardware offerings. We expect our SideSwipe, EcoID and SideTouch finger readers, and our biometric and Bluetooth enabled padlocks, luggage locks, and bicycle locks to continue to drive incremental revenue and growth.

We intend to expand our business into the cloud and mobile computing industries. The emergence of cloud computing and mobile computing are primary drivers of commercial and consumer adoption of advanced authentication applications, including biometric and BIO-key authentication capabilities. As the value of assets, services and transactions increases on such networks, we expect that security and user authentication demand should rise proportionately. Our integration partners include major web and network technology providers, who we believe will deliver our cloud-applicable solutions to interested service-providers. These service-providers could include, but are not limited to, financial institutions, web-service providers, consumer payment service providers, credit reporting services, consumer data service providers, healthcare providers and others. Additionally, our integration partners include major technology component providers and OEM manufacturers, who we believe will deliver our device-applicable solutions to interested hardware manufacturers. Such manufacturers could include cellular handset and smartphone manufacturers, tablet manufacturers, laptop and PC manufacturers, among other hardware manufacturers. Our recently introduced SAML and Open ID solutions will create new opportunities for us in 2019.

RESULTS OF OPERATIONS

Consolidated Results of Operations

Two Year % trend

	Years ended December 31,	
	2018	**2017**
Revenues		
Services	25 %	19 %
License fees and other	43 %	51 %
Hardware	32 %	30 %
	100 %	100 %
Costs and other expenses		
Cost of services	11 %	7 %
Cost of license, hardware and other	92 %	44 %
	103 %	51 %
Gross Profit (Loss)	-3 %	49 %
Operating expenses		
Selling, general and administrative	132 %	91 %
Research, development and engineering	35 %	26 %
	167 %	117 %
Operating loss	-170%	-68 %

Other income (deductions)		
Total other income (deductions)	0 %	0 %
Net loss	-170%	-68 %

Revenues and Costs of goods sold

			2018 - 2017	
	2018	**2017**	**$ Chg**	**% Chg**
Revenues				
Service	$1,012,576	$1,193,190	$(180,614)	-15 %
License fees and other	1,739,897	3,220,371	(1,480,474)	-46 %
Hardware	1,292,069	1,889,423	(597,354)	-32 %
Total Revenue	$4,044,542	$6,302,984	$(2,258,442)	-36 %
Cost of goods sold				
Service	$443,210	$439,291	$3,919	1 %
License, hardware & other	3,720,980	2,802,860	918,120	33 %
Total COGS	$4,164,190	$3,242,151	$922,039	28 %

Revenues

Revenue decreased $2,258,442 or 36% to $4,044,542 in 2018 as compared to $6,302,984 in 2017 due to the factors stated below.

For the years ended December 31, 2018 and 2017, service revenues included approximately $895,000 and $501,000, respectively, of recurring maintenance and support revenue, and approximately $118,000 and $692,000, respectively, of non-recurring custom services revenue. Recurring service revenue increased 78% from 2017 to 2018 due to a large three year maintenance contract, and several smaller orders from new customers. As our customer base continues to grow, we expect the recurring revenue to increase in future periods. Non-recurring custom services decreased 83% in 2018 as a result of a completed special software requirement from an existing customer in the first quarter of 2018.

For the years ended December 31, 2018 and 2017, license revenue decreased 46% to $1,739,897. The decrease was due to one large order received in the fourth quarter of 2017 in amount of approximately $2,500,000 compared to one large international order in the fourth quarter of 2018 for which revenue is being recognized as payments are received and amount recognized in 2018 was approximately $1,111,000. The balance of approximately $3,889,000 is expected to be recognized in 2019 as payments are received.

Hardware sales decreased by approximately $597,000, or 32%, to $1,292,069 in 2018 as a result of fewer large customer deployments, and retail sales. Fingerprint reader sales decreased approximately $527,000, or 34%, while the biometric locks decreased approximately $71,000, or 21% from their initial launch in 2017.

Costs of goods sold

For the year ended December 31, 2018, cost of service increased approximately 1% to $443,210, due to reallocated research and development personnel to support the custom services revenue and customer maintenance.

License, hardware and other costs for the year ended December 31, 2018 increased approximately 33% to $3,720,980. The increase was attributable primarily to the amortization and actual deployments of the software rights in the approximate amount of $2,658,000 compared to $1,585,000 in 2017.

Selling, general and administrative

		2018 - 2017	
2018	**2017**	**$ Chg**	**% Chg**
$5,333,906	$5,676,323	$(342,417)	-6 %

Selling, general and administrative costs for year ended December 31, 2018 were $5,333,906 representing a 6% decrease from over 2017. Increases in costs included non-cash, share-based compensation expenses, increased bad debt expense, marketing personnel and related costs. These amounts were offset by decreases in payroll and related expenses, factoring fees, commitment fees related to the Nasdaq uplisting in 2017, commission, and contractor expenses.

Research, development and engineering

		2018 - 2017	
2018	**2017**	**$ Chg**	**% Chg**
$1,415,401	$1,659,875	$(244,474)	-15 %

For the year ended December 31, 2018, research, development and engineering costs were $1,415,401 representing a 15% decrease over 2017, as a result of decreased personnel and related costs. These amounts were offset by increased costs related to our Hong Kong subsidiary, temporary outside services, non-cash share-based compensation expenses, and recruiting costs.

LIQUIDITY AND CAPITAL RESOURCES

Operating activities overview

Net cash used for operations during the year ended December 31, 2018 was approximately $1,613,000. Items of note included:

- Negative cash flows related to changes in inventory, accounts payable, accruals, and deferred revenue of approximately $521,000, due to working capital management, and

- Net positive cash flows related to accounts receivable and the adjustments for non-cash expenses for depreciation, amortization, share-based compensation of approximately $4,059,000, and an increase in allowance for doubtful accounts of approximately $720,000.

Investing activities overview

Approximately $82,000 was used for investing activities during the year ended December 31, 2018 relating to capital expenditures

Financing activities overview

Approximately $1,731,000 was provided by financing activities during the year ended December 31, 2018 consisting of approximately $1,875,100 (net of $144,900 in commissions and $50,000 in reimbursable expenses) from the issuance of common stock less approximately $144,000 of stock issuance costs.

CAPITAL RESOURCES

Since our inception, our capital needs have been principally met through proceeds from the sale of equity and debt securities. We expect capital expenditures to be less than $100,000 during the next twelve months.

The following sets forth our primary sources of capital during the previous two years:

We entered into an accounts receivable factoring arrangement with a financial institution (the "Factor") which has since been extended through October 31, 2019. Pursuant to the terms of the arrangement, from time to time, we sell to the Factor a minimum of $150,000 of certain of our accounts receivable balances per quarter on a non-recourse basis for credit approved accounts. The Factor remits 35% of the foreign and 75% of the domestic accounts receivable balance to us (the "Advance Amount"), with the remaining balance, less fees, to be forwarded to us once the Factor collects the full accounts receivable balance from the customer. In addition, from time to time, we receive over advances from the Factor. Factoring fees range from 2.75% to 15% of the face value of the invoice factored, and are determined by the number of days required for collection of the invoice. We expect to continue to use this factoring arrangement periodically to assist with our general working capital requirements due to contractual requirements.

On April 28, 2017, we issued to Wong Kwok Fong (Kelvin), a director, executive officer and principal stockholder of the Company, 277,778 shares of common stock at a purchase price of $3.60 per share for gross cash proceeds of $1,000,000.

On May 2, 2017, we entered into a committed equity facility pursuant to which we may issue and sell up to $5.0 million worth of shares of common stock, subject to certain limitations and satisfaction of certain conditions, over a 36-month term following the effectiveness of a registration statement covering the public resale of the shares of common stock issued under the facility. As of the date of this report, the registration statement has not been filed. From time to time over the term of the facility, we may issue requests to the investor to purchase a specified dollar amount of shares up to a maximum of $100,000 over a five trading day period based on the daily volume weighted average price of our common stock (VWAP) to the extent the VWAP equals or exceeds the greater of a formula amount or $3.83 per share. The per share purchase price for the shares issued under the facility will be equal to 94% of the lowest VWAP that equals or exceeds $3.83 per share. Aggregate sales under the facility are limited to 19.99% of the total outstanding shares of the Company's common stock as of May 2, 2017, unless stockholder approval is obtained, and sales under the facility are prohibited if such a sale would result in beneficial ownership by the investor of more than 9.99% of the Company's common stock.

On September 22, 2017, we issued to Wong Kwok Fong (Kelvin), a director, executive officer and principal stockholder of the Company, 427,778 shares of common stock and warrants to purchase 138,889 shares of common stock for an aggregate purchase price of $1,540,000, or $3.60 per share. The purchase consisted of a cash payment of $1,000,000 and the conversion of accrued dividends payable on the Company's Series A-1 Convertible Preferred Stock of $540,000.

On August 24, 2018, we completed a public offering of units consisting of 1,380,000 shares of common stock and warrants to purchase 1,035,000 shares of common stock for an aggregate gross proceeds of $2,070,000, or $1.50 per unit.

LIQUIDITY OUTLOOK

At December 31, 2018, our total cash and cash equivalents were approximately $324,000, as compared to approximately $289,000 at December 31, 2017.

As discussed above, we have historically financed our operations through access to the capital markets by issuing secured and convertible debt securities, convertible preferred stock, common stock, and through factoring receivables. We currently require approximately $537,000 per month to conduct our operations, a monthly amount that we have been unable to consistently achieve through revenue generation. During 2018, we generated approximately $4,044,000 of revenue, which is below our average monthly requirements.

If we are unable to generate sufficient revenue to fund current operations or meet our goals, we will need to obtain additional third-party financing to (i) conduct the sales, marketing and technical support necessary to execute our plan to substantially grow operations, increase revenue and serve a significant customer base; and (ii) provide working capital. We may, therefore, need to obtain additional financing through the issuance of debt or equity securities.

Due to several factors, including our history of losses and limited revenue, our independent auditors have included an explanatory paragraph in their opinion related to our annual financial statements as to the substantial doubt about our ability to continue as a going concern. Our long-term viability and growth will depend upon the successful commercialization of our technologies and our ability to obtain adequate financing. To the extent that we require such additional financing, no assurance can be given that any form of additional financing will be available on terms acceptable to us, that adequate financing will be obtained to meet our needs, or that such financing would not be dilutive to existing stockholders. If available financing is insufficient or unavailable or we fail to continue to generate sufficient revenue, we may be required to further reduce operating expenses, delay the expansion of operations, be unable to pursue merger or acquisition candidates, or in the extreme case, not continue as a going concern.

OFF-BALANCE SHEET ARRANGEMENTS

We do not have any off-balance sheet arrangements that have, or are in the opinion of management reasonably likely to have, a current or future effect on our financial condition or results of operations.

CRITICAL ACCOUNTING POLICIES

Our financial statements are prepared in accordance with accounting principles generally accepted in the United States. The preparation of these financial statements requires that we make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenue and expenses during the reporting periods. We base our estimates on historical experience and on various other assumptions that we believe to be reasonable under the circumstances. We evaluate our estimates and assumptions on an ongoing basis. Our actual results may differ significantly from these estimates under different assumptions or conditions. With the exception of the adoption of ASC 606 for revenue recognition, there have been no material changes to these estimates for the periods presented in this Annual Report on Form 10-K.

We believe that of our significant accounting policies, which are described in Note A of the notes to our consolidated financial statements included in this Annual Report on Form 10-K, the following accounting policies involve a greater degree of judgment and complexity. Accordingly, these are the policies we believe are the most critical to aid in fully understanding and evaluating our financial condition and results of operations.

1. Revenue Recognition

We adopted ASC 606, *Revenue from Contracts with Customers* (ASC 606) on January 1, 2018 using the modified retrospective method for all contracts not completed as of the date of adoption. The reported results for 2018 reflect the application of ASC 606 guidance while the reported results for 2017 were prepared under the guidance of ASC 605, *Revenue Recognition* (ASC 605), which is also referred to herein as "legacy GAAP" or the "previous guidance". The adoption of ASC 606 represents a change in accounting principle that will more closely align revenue recognition with the delivery of the Company's services and will provide financial statement readers with enhanced disclosures.

In accordance with ASC 606, revenue is recognized when a customer obtains control of promised services. The amount of revenue recognized reflects the consideration to which the Company expects to be entitled to receive in exchange for these services. To achieve this core principle, the Company applies the following five steps:

- Identify the contract with a customer
- Identify the performance obligations in the contract
- Determine the transaction price
- Allocate the transaction price to performance obligations in the contract
- Recognize revenue when or as the Company satisfies a performance obligation

All of our performance obligations, and associated revenue, are generally transferred to customers at a point in time, with the exception of support and maintenance, and professional services, which are generally transferred to the customer over time.

Software licenses

Software license revenue consist of fees for perpetual software licenses for one or more of our biometric fingerprint solutions. Revenue is recognized at a point in time once the software is available to the customer for download. Software license contracts are generally invoiced in full on execution of the arrangement.

Hardware

Hardware revenue consists of fees for associated equipment sold with or without a software license arrangement, such as servers, locks and fingerprint readers. Customers are not obligated to buy third party hardware from us, and may procure these items from a number of suppliers. Revenue is recognized at a point in time once the hardware is shipped to the customer. Hardware items are generally invoiced in full on execution of the arrangement.

Support and Maintenance

Support and Maintenance revenue consists of fees for unspecified upgrades, telephone assistance and bug fixes. We satisfy our Support and Maintenance performance obligation by providing “stand-ready” assistance as required over the contract period. We record deferred revenue (contract liability) at time of prepayment until the contracts term occurs. Revenue is recognized over time on a ratable basis over the contract term. Support and Maintenance contracts are up to one year in length and are generally invoiced either annually or quarterly in advance.

Professional Services

Professional services revenues consist primarily of fees for deployment and optimization services, as well as training. The majority of our consulting contracts are billed on a time and materials basis, and revenue is recognized based on the amount billable to the customer in accordance with practical expedient ASC 606-10-55-18. For other professional services contracts, we utilize an input method and recognizes revenue based on labor hours expended to date relative to the total labor hours expected to be required to satisfy its performance obligation.

Contracts with Multiple Performance Obligations

Some contracts with customers contain multiple performance obligations. For these contracts, we account for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. The standalone selling prices are determined based on overall pricing objectives, taking into consideration market conditions and other factors, including the value of the contracts, the cloud applications sold, customer demographics, geographic locations, and the number and types of users within the contracts.

We considered several factors in determining that control transfers to the customer upon shipment of hardware and availability of download of software. These factors include that legal title transfers to the customer, the Company has a present right to payment, and the customer has assumed the risks and rewards of ownership.

Accounts receivable from customers are typically due within 30 days of invoicing. We do not record a reserve for product returns or warranties as amounts are deemed immaterial based on historical experience.

Costs to Obtain and Fulfill a Contract

Costs to obtain and fulfill a contract are predominantly sales commissions earned by the sales force and are considered incremental and recoverable costs of obtaining a contract with a customer. These costs are deferred and then amortized over a period of benefit determined to be four years. These costs are included as capitalized contract costs on the balance sheet. The period of benefit was determined by taking into consideration customer contracts, technology, and other factors based on historical evidence. Amortization expense is included in selling, general and administrative expenses in the accompanying condensed consolidated statements of operations.

2. Impairment or Disposal of Long Lived Assets, including Intangible Assets

We review our long-lived assets, including intangible assets subject to amortization, whenever events or changes in circumstances indicate that the carrying amount of such an asset may not be recoverable. Recoverability of these assets is measured by comparison of their carrying amount to the future undiscounted cash flows the assets are expected to generate. If such assets are considered impaired, the impairment to be recognized is equal to the amount by which the carrying value of the assets exceeds their fair value determined by either a quoted market price, if any, or a value determined by utilizing a discounted cash flow technique. In assessing recoverability, we must make assumptions regarding estimated future cash flows and discount factors. If these estimates or related assumptions change in the future, we may be required to record impairment charges. Intangible assets with determinable lives are amortized over their estimated useful lives, based upon the pattern in which the expected benefits will be realized, or on a straight-line basis, whichever is greater. We did not record any impairment charges in any of the years presented.

3. Research and Development Expenditures

Research and development expenses include costs directly attributable to the conduct of research and development programs primarily related to the development of our software products and improving the efficiency and capabilities of our existing software. Such costs include salaries, payroll taxes, employee benefit costs, materials, supplies, depreciation on research equipment, services provided by outside contractors, and the allocable portions of facility costs, such as rent, utilities, insurance, repairs and maintenance, depreciation and general support services. All costs associated with research and development are expensed as incurred.

4. Income Taxes

The provision for, or benefit from, income taxes includes deferred taxes resulting from the temporary differences in income for financial and tax purposes using the liability method. Such temporary differences result primarily from the differences in the carrying value of assets and liabilities. Future realization of deferred income tax assets requires sufficient taxable income within the carryforward period available under tax law. We evaluate, on a quarterly basis whether, based on all available evidence, it is probable that the deferred income tax assets are realizable. Valuation allowances are established when it is more likely than not that the tax benefit of the deferred tax asset will not be realized. The evaluation, as prescribed by ASC 740-10, “Income Taxes,” includes the consideration of all available evidence, both positive and negative, regarding historical operating results including recent years with reported losses, the estimated timing of future reversals of existing taxable temporary differences, estimated future taxable income exclusive of reversing temporary differences and carryforwards, and potential tax planning strategies which may be employed to prevent an operating loss or tax credit carryforward from expiring unused. Because of our historical performance and estimated future taxable income a full valuation allowance has been established.

5. Accounting for Stock-Based Compensation

We account for share based compensation in accordance with the provisions of ASC 718-10, “Compensation — Stock Compensation,” which requires measurement of compensation cost for all stock awards at fair value on date of grant and recognition of compensation over the service period for awards expected to vest. The majority of our share-based compensation arrangements vest over either a three or four year vesting schedule. We expense our share-based compensation under the ratable method, which treats each vesting tranche as if it were an individual grant. The fair value of stock options is determined using the Black-Scholes valuation model, and requires the input of highly subjective assumptions. These assumptions include estimating the length of time employees will retain their vested stock options before exercising them (the “expected option term”), the estimated volatility of our common stock price over the option’s expected term, the risk-free interest rate over the option’s expected term, and our expected annual dividend yield. Changes in these subjective assumptions can materially affect the estimate of fair value of stock-based compensation and consequently, the related amount recognized as an expense in the consolidated statements of operations. As required under the accounting rules, we review our valuation assumptions at each grant date and, as a result, are likely to change our valuation assumptions used to value employee stock-based awards granted in future periods. The values derived from using the Black-Scholes model are recognized as expense over the service period, net of estimated forfeitures (the number of individuals that will ultimately not complete their vesting requirements). The estimation of stock awards that will ultimately vest requires significant judgment. We consider many factors when estimating expected forfeitures, including types of awards, employee class, and historical experience. Actual results, and future changes in estimates, may differ substantially from our current estimates.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

See financial statements appearing at pages 26-53 of this Annual Report on Form 10-K

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Disclosure Controls and Procedures

Our management, with the participation of our Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), evaluated the effectiveness of our disclosure controls and procedures as of December 31, 2018. The term "disclosure controls and procedures," as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act"), means controls and other procedures of a company that are designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is recorded, processed, summarized and reported, within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures include, without limitation, controls and procedures designed to ensure that information required to be disclosed by a company in the reports that it files or submits under the Exchange Act is accumulated and communicated to the Company's management, including its principal executive and principal financial officers, as appropriate to allow timely decisions regarding required disclosure. Based on the evaluation of our disclosure controls and procedures as of December 31, 2018, our CEO and CFO concluded that, as of such date, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Annual Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, the risk. 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.

Under the supervision and with the participation of our management, including our CEO and CFO, we have conducted an evaluation of the effectiveness of our internal control over financial reporting as of December 31, 2018, based upon the framework in *Internal Control-Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2018.

As we are a smaller reporting company, this annual report does not include an attestation report of our registered public accounting firm regarding internal control over financial reporting. Management's report was not subject to attestation by our registered public accounting firm pursuant to rules of the Securities and Exchange Commission that permit the company to provide only management's report in this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

No change in our internal control over financial reporting occurred during the quarter ended December 31, 2018 that has materially affected, or is reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. – OTHER INFORMATION

None.

ITEM 10. – DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by this item will be set forth under "Proposal No. 1: Election of Directors" in the 2019 Proxy Statement and incorporated herein by reference.

ITEM 11. – EXECUTIVE COMPENSATION

The information required by this item will be set forth under “Executive and Director Compensation” in the 2019 Proxy Statement and incorporated herein by reference.

ITEM 12. – SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

The information required by Item 403 of Regulation S-K regarding security ownership of certain beneficial owners and management will be set forth under “Stock Ownership” in the 2019 Proxy Statement and incorporated herein by reference.

The Equity Compensation Plan Information table required pursuant to Item 201(d) of Regulation S-K will be set forth in the 2019 Proxy Statement and incorporated herein by reference.

ITEM 13. – CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

The information required by this item will be set forth under “Transactions with Related Persons” and “Director Independence” in the 2019 Proxy Statement and incorporated herein by reference.

ITEM 14. – PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this item will be set forth under “Ratification of Rotenberg Meril Solomon Bertiger & Guttilla, P.C. as Independent Registered Public Accounting Firm for 2019” in the 2019 Proxy Statement and incorporated herein by reference.

ITEM 15. – EXHIBITS

(a) The following documents are filed as part of this Report. Portions of Item 15 are submitted as separate sections of this Report:

(1) Financial statements filed as part of this Report:

Reports of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as at December 31, 2018 and 2017

Consolidated Statements of Operations—Years ended December 31, 2018 and 2017

Consolidated Statement of Stockholders' Equity—Years ended December 31, 2018 and 2017

Consolidated Statements of Cash Flows—Years ended December 31, 2018 and 2017

Notes to Consolidated Financial Statements—December 31, 2018 and 2017

(b) The exhibits listed in the Exhibits Index immediately preceding such exhibits are filed as part of this Report

ITEM 16. – FORM 10-K SUMMARY

None.

ITEM 8—FINANCIAL STATEMENTS

The following financial statements of BIO-key International, Inc. are included herein at the indicated page numbers:

Report of Independent Registered Public Accounting Firm	27
Consolidated Balance Sheets as at December 31, 2018 and 2017	28
Consolidated Statements of Operations—Years ended December 31, 2018 and 2017	29
Consolidated Statements of Stockholders' Equity—Years ended December 31, 2018 and 2017	30
Consolidated Statements of Cash Flows—Years ended December 31, 2018 and 2017	31
Notes to the Consolidated Financial Statements—December 31, 2018 and 2017	33

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of

BIO-key International, Inc.

Wall, NJ

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of BIO-key International, Inc. and Subsidiaries (the "Company") as of December 31, 2018 and 2017, and the related consolidated statements of operations, stockholders' equity and cash flows for the years then ended, and the related notes (collectively referred to as the "financial statements"). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for the years then ended in conformity with accounting principles generally accepted in the United States of America.

Going Concern

The accompanying consolidated financial statements have been prepared assuming that the Company will continue as a going concern. As disclosed in the consolidated financial statements, the Company has suffered substantial net losses in recent years, has an accumulated deficit at December 31, 2018 and is dependent on debt and equity financing to fund its operations, all of which raise substantial doubt about the Company's ability to continue as a going concern. Management's plans regarding these matters are disclosed in Note A. The consolidated financial statements do not include any adjustments that might result from the outcome of this uncertainty.

Basis for Opinion

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

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

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

/s/ Rotenberg Meril Solomon Bertiger & Guttilla,P.C.
ROTENBERG MERIL SOLOMON BERTIGER &
GUTTILLA, P.C.
We have served as the Company's auditor since 2010.
Saddle Brook, New Jersey
April 1, 2019

BIO-key International, Inc. and Subsidiaries

CONSOLIDATED BALANCE SHEETS

	December 31, 2018	2017
ASSETS		
Cash and cash equivalents	$323,943	$288,721
Accounts receivable, net	1,574,032	2,875,946
Due from factor	56,682	109,865
Inventory	998,829	946,847
Resalable software license rights	1,125,000	2,640,000
Prepaid expenses and other	150,811	152,654
Total current assets	4,229,297	7,014,033
Resalable software license rights, net of current portion	6,790,610	7,933,808
Accounts receivable, net of current portion	-	760,000
Equipment and leasehold improvements, net	148,608	181,165
Capitalized contract costs, net	319,199	-
Deposits and other assets	8,712	8,712
Intangible assets, net	195,906	181,104
Total non-current assets	7,463,035	9,064,789
TOTAL ASSETS	$11,692,332	$16,078,822
LIABILITIES		
Accounts payable	$481,269	$499,230
Accrued liabilities	548,232	688,023
Dividends payable on preferred stock	-	630,408
Deferred revenue	196,609	507,866
Total current liabilities	1,226,110	2,325,527
TOTAL LIABILITIES	1,226,110	2,325,527
Commitments and Contingencies		
STOCKHOLDERS' EQUITY		
Series A-1 convertible preferred stock: authorized, 100,000 (liquidation preference of $100 per share); issued and outstanding 0 and 62,596 of $.0001 par value at December 31, 2018 and December 31, 2017, respectively	-	6
Series B-1 convertible preferred stock: authorized, 105,000 (liquidation preference of $100 per share); issued and outstanding 0 and 105,000 of $.0001 par value at December 31, 2018 and December 31, 2017, respectively	-	11
Common stock — authorized, 170,000,000 shares; issued and outstanding; 13,977,868 and 7,691,324 of $.0001 par value at December 31, 2018 and December 31, 2017, respectively	1,398	769
Additional paid-in capital	85,599,140	80,829,001
Accumulated deficit	(75,134,316)	(67,076,492)

TOTAL STOCKHOLDERS' EQUITY	10,466,222	13,753,295
TOTAL LIABILITIES AND STOCKHOLDERS' EQUITY	$11,692,332	$16,078,822

The accompanying notes are an integral part of these statements.

BIO-key International, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF OPERATIONS

	Years ended December 31,	
	2018	**2017**
Revenues		
Services	$1,012,576	$1,193,190
License fees and other	1,739,897	3,220,371
Hardware	1,292,069	1,889,423
Total revenues	4,044,542	6,302,984
Costs and other expenses		
Cost of services	443,210	439,291
Cost of license fees, hardware and other	3,720,980	2,802,860
Total costs and other expenses	4,164,190	3,242,151
Gross Profit (Loss)	(119,648)	3,060,833
Operating expenses		
Selling, general and administrative	5,333,906	5,676,323
Research, development and engineering	1,415,401	1,659,875
Total operating expenses	6,749,307	7,336,198
Operating loss	(6,868,955)	(4,275,365)
Other income		
Interest income	80	27
Total other income	80	27
Net loss	(6,868,875)	(4,275,338)
Deemed dividend from trigger of anti-dilution provision feature	(1,428,966)	-
Convertible preferred stock dividends	(198,033)	(769,158)
Net loss available to common stockholders	(8,495,874)	(5,044,496)
Basic and Diluted Loss per Common Share	$(0.73)	$(0.76)
Weighted Average Shares Outstanding:		
Basic and Diluted	11,607,933	6,638,382

The accompanying notes are an integral part of these statements.

BIO-key International, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

	Series A-1 Preferred Stock		Series B-1 Preferred Stock		Common Stock		Additional Paid-in	Accumulated	
	Shares	Amount	Shares	Amount	Shares	Amount	Capital	Deficit	Total
Balance as of December 31, 2016	**90,000**	**$9**	**105,000**	**$11**	**6,093,843**	**$609**	**$78,253,413**	**$(62,801,154)**	**$15,452,888**
Issuance of common stock for directors' fees					11,244	1	32,029		32,030
Issuance of common stock pursuant to securities purchase agreement					555,556	56	1,999,944		2,000,000
Dividends declared on preferred stock							(769,158)		(769,158)
Conversion of dividends payable on A-1 preferred stock					150,000	15	539,985		540,000
Conversion of A-1 preferred stock to common stock	(27,404)	(3)			761,222	76	(73)		-
Issuance of stock for consultants					117,849	12	354,573		354,585
Stock issuance costs							(80,366)		(80,366)
Exercise of stock options					1,610	-	-		-
Share-based compensation							498,654		498,654
Net loss								(4,275,338)	(4,275,338)

Balance as of December 31, 2017	**62,596**	**$6**	**105,000**	**$11**	**7,691,324**	**$769**	**$80,829,001**	**$(67,076,492)**	**$13,753,295**
Adoption of ASC 606								240,017	240,017
Issuance of common stock for directors' fees					20,976	2	37,530		37,532
Issuance of common stock pursuant to securities purchase agreement					1,380,000	138	2,069,862		2,070,000
Dividends declared on preferred stock							(198,033)		(198,033)
Conversion of A-1 preferred stock to common stock	(62,596)	(6)			1,738,778	174	(168)		-
Conversion of B-1 preferred stock to common stock			(105,000)	(11)	2,916,668	292	(281)		-
Conversion of dividends payable on A-1 preferred stock					98,893	10	356,005		356,015
Conversion of dividends payable on B-1 preferred stock					131,229	13	472,411		472,424
Deemed dividend related to down-round features							1,428,966	(1,428,966)	-
Stock issuance costs							(338,845)		(338,845)
Share-based compensation							942,692		942,692
Net loss								(6,868,875)	(6,868,875)
Balance as of December 31, 2018	**-**	**$-**	**-**	**$-**	**13,977,868**	**$1,398**	**$85,599,140**	**$(75,134,316)**	**$10,466,222**

The accompanying notes are an integral part of these statements.

BIO-key International, Inc. and Subsidiaries

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years ended December 31,	
	2018	**2017**
CASH FLOW FROM OPERATING ACTIVITIES:		
Net loss	$(6,868,875)	$(4,275,338)
Adjustments to reconcile net loss to cash used for operating activities:		
Allowance for doubtful accounts	720,000	500,000
Depreciation	84,617	52,709
Amortization of intangible assets	15,596	13,726
Amortization of resaleable software license rights	1,513,237	1,510,051
Amortization of capitalized contract costs	123,171	-
Share and warrant-based compensation for employees and consultants	942,692	940,734
Stock based fees to directors	37,532	32,030
Change in assets and liabilities:		
Accounts receivable	1,341,914	(1,002,700)
Due from factor	53,183	(56,227)
Capitalized contract costs	(202,353)	-
Inventory	(51,982)	(481,419)
Resaleable software license rights	1,144,961	74,552
Prepaid expenses and other	1,843	(33,472)
Accounts payable	(17,961)	32,388
Accrued liabilities	(139,793)	352,700
Deferred revenue	(311,257)	(125,196)
Net cash used for operating activities	(1,613,475)	(2,465,462)
CASH FLOWS FROM INVESTING ACTIVITIES:		
Patents	(30,398)	(60,698)
Capital expenditures	(52,060)	(166,060)
Net cash used for investing activities	(82,458)	(226,758)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Issuance of common stock	1,875,100	2,000,000
Costs to issue common stock	(143,945)	(80,366)
Net cash provided by financing activities	1,731,155	1,919,634
NET INCREASE (DECREASE) IN CASH AND CASH EQUIVALENTS	35,222	(772,586)
CASH AND CASH EQUIVALENTS, BEGINNING OF YEAR	288,721	1,061,307
CASH AND CASH EQUIVALENTS, END OF YEAR	$323,943	$288,721

The accompanying notes are an integral part of these statements.

31

SUPPLEMENTARY DISCLOSURES OF CASH FLOW INFORMATION

	Years ended December 31,	
	2018	**2017**
Cash paid for:		
Interest	$-	$-
Income taxes	$-	$-
Noncash investing and financing activities:		
Accrual of unpaid preferred dividends	$198,033	$630,408
Conversion of A-1 preferred dividends payable to common stock	$356,015	$540,000
Conversion of A-1 preferred stock to common stock	$6,259,600	$2,740,400
Conversion of B-1 preferred dividends payable to common stock	$472,426	$-
Conversion of B-1 preferred stock to common stock	$10,500,000	$-
Deemed dividend from trigger of anti-dilution provision feature	$1,428,966	$-
Issuance of common stock as a commitment fee for the Equity facility	$-	$198,000
Issuance of common stock as consulting services for the Equity facility	$-	$244,084

The accompanying notes are an integral part of these statements.

BIO-key International, Inc. and Subsidiaries

NOTES TO THE FINANCIAL STATEMENTS

December 31, 2018 and 2017

NOTE A —THE COMPANY AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Nature of Business

The Company, founded in 1993, develops and markets proprietary fingerprint identification biometric technology and software solutions. The Company was a pioneer in developing automated, finger identification technology that supplements or compliments other methods of identification and verification, such as personal inspection identification, passwords, tokens, smart cards, ID cards, PKI, credit card, passports, driver's licenses, OTP or other form of possession or knowledge-based credentialing. Additionally, advanced BIO-key® technology has been, and is, used to improve both the accuracy and speed of competing finger-based biometrics.

Basis of Presentation

The Company has incurred significant losses to date, and at December 31, 2018, it had an accumulated deficit of approximately $75.1 million. In addition, broad commercial acceptance of the Company's technology is critical to the Company's success and ability to generate future revenues. At December 31, 2018, total cash and cash equivalents were approximately $324,000, as compared to approximately $289,000 at December 31, 2017.

As discussed below, the Company has financed itself in the past through access to the capital markets by issuing secured and convertible debt securities, convertible preferred stock, common stock, and through factoring receivables. The Company currently requires approximately $537,000 per month to conduct operations, a monthly amount that it has been unable to consistently achieve through revenue generation.

If the Company is unable to generate sufficient revenue to meet its goals, it will need to obtain additional third-party financing to (i) conduct the sales, marketing and technical support necessary to execute its plan to substantially grow

operations, increase revenue and serve a significant customer base; and (ii) provide working capital. No assurance can be given that any form of additional financing will be available on terms acceptable to the Company, that adequate financing will be obtained by the Company in order to meet its needs, or that such financing would not be dilutive to existing shareholders.

The accompanying financial statements have been prepared in conformity with accounting principles generally accepted in the United States of America ("GAAP"), which contemplate continuation of the Company as a going concern, and assumes continuity of operations, realization of assets and the satisfaction of liabilities and commitments in the normal course of business. The matters described in the preceding paragraphs raise substantial doubt about the Company's ability to continue as a going concern. Recoverability of a major portion of the recorded asset amounts shown in the accompanying balance sheet is dependent upon the Company's ability to meet its financing requirements on a continuing basis, and become profitable in its future operations. The accompanying consolidated financial statements do not include any adjustments relating to the recoverability and classification of recorded assets or the amounts and classification of liabilities that might be necessary should the Company be unable to continue in existence.

Summary of Significant Accounting Policies

A summary of the significant accounting policies consistently applied in the preparation of the accompanying consolidated financial statements follows:

1. *Basis of Consolidation*

The accompanying consolidated financial statements include the accounts of BIO-key International, Inc. and its wholly-owned subsidiaries (collectively, the "Company"). Intercompany accounts and transactions have been eliminated in consolidation.

2. *Use of Estimates*

Our consolidated financial statements are prepared in accordance with GAAP as set forth in the Financial Accounting Standards Board's (FASB) Accounting Standards Codification (ASC) and consider the various staff accounting bulletins and other applicable guidance issued by the U.S. Securities and Exchange Commission (SEC). These accounting principles require us to make certain estimates, judgments and assumptions. The Company believes that the estimates, judgments and assumptions upon which it relies are reasonable based upon information available to us at the time that these estimates, judgments and assumptions are made. These estimates, judgments and assumptions can affect the reported amounts of assets and liabilities as of the date of the financial statements as well as the reported amounts of revenues and expenses during the periods presented. To the extent there are material differences between

these estimates, judgments or assumptions and actual results, its consolidated financial statements will be affected. In many cases, the accounting treatment of a particular transaction is specifically dictated by GAAP and does not require management's judgment in its application. There are also areas in which management's judgment in selecting among available alternatives would not produce a materially different result.

3. *Revenue Recognition*

The Company adopted ASC 606, *Revenue from Contracts with Customers* (ASC 606) on January 1, 2018 using the modified retrospective method for all contracts not completed as of the date of adoption. The reported results for 2018 reflect the application of ASC 606 guidance while the reported results for 2017 were prepared under the guidance of ASC 605, *Revenue Recognition* (ASC 605), which is also referred to herein as "legacy GAAP" or the "previous guidance". The adoption of ASC 606 represents a change in accounting principle that will more closely align revenue recognition with the delivery of the Company's services and will provide financial statement readers with enhanced disclosures.

In accordance with ASC 606, revenue is recognized when a customer obtains control of promised services. The amount of revenue recognized reflects the consideration to which the Company expects to be entitled to receive in exchange for these services. To achieve this core principle, the Company applies the following five steps:

- Identify the contract with a customer
- Identify the performance obligations in the contract
- Determine the transaction price
- Allocate the transaction price to performance obligations in the contract
- Recognize revenue when or as the Company satisfies a performance obligation

All of the Company's performance obligations, and associated revenue, are generally transferred to customers at a point in time, with the exception of support and maintenance, and professional services, which are generally transferred to the customer over time.

Software licenses

Software license revenue consist of fees for perpetual software licenses for one or more of the Company’s biometric fingerprint solutions. Revenue is recognized at a point in time once the software is available to the customer for download. Software license contracts are generally invoiced in full on execution of the arrangement.

Hardware

Hardware revenue consists of fees for associated equipment sold with or without a software license arrangement, such as servers, locks and fingerprint readers. Customers are not obligated to buy third party hardware from the Company, and may procure these items from a number of suppliers. Revenue is recognized at a point in time once the hardware is shipped to the customer. Hardware items are generally invoiced in full on execution of the arrangement.

Support and Maintenance

Support and Maintenance revenue consists of fees for unspecified upgrades, telephone assistance and bug fixes. The Company satisfies its Support and Maintenance performance obligation by providing “stand-ready” assistance as required over the contract period. The Company records deferred revenue (contract liability) at time of prepayment until the contracts term occurs. Revenue is recognized over time on a ratable basis over the contract term. Support and Maintenance contracts are up to one year in length and are generally invoiced either annually or quarterly in advance.

Professional Services

Professional services revenues consist primarily of fees for deployment and optimization services, as well as training. The majority of the Company’s consulting contracts are billed on a time and materials basis, and revenue is recognized based on the amount billable to the customer in accordance with practical expedient ASC 606-10-55-18. For other professional services contracts, the Company utilizes an input method and recognizes revenue based on labor hours expended to date relative to the total labor hours expected to be required to satisfy its performance obligation.

Contracts with Multiple Performance Obligations

Some contracts with customers contain multiple performance obligations. For these contracts, the Company accounts for individual performance obligations separately if they are distinct. The transaction price is allocated to the separate performance obligations on a relative standalone selling price basis. The standalone selling prices are determined based on overall pricing objectives, taking into consideration market conditions and other factors, including the value of the contracts, the cloud applications sold, customer demographics, geographic locations, and the number and types of users within the contracts.

The Company considered several factors in determining that control transfers to the customer upon shipment of hardware and availability of download of software. These factors include that legal title transfers to the customer, the Company has a present right to payment, and the customer has assumed the risks and rewards of ownership.

Accounts receivable from customers are typically due within 30 days of invoicing. The Company does not record a reserve for product returns or warranties as amounts are deemed immaterial based on historical experience.

Costs to Obtain and Fulfill a Contract

Costs to obtain and fulfill a contract are predominantly sales commissions earned by the sales force and are considered incremental and recoverable costs of obtaining a contract with a customer. These costs are deferred and then amortized over a period of benefit determined to be four years. These costs are included as capitalized contract costs on the balance sheet. The period of benefit was determined by taking into consideration customer contracts, technology, and other factors based on historical evidence. Amortization expense is included in selling, general and administrative expenses in the accompanying condensed consolidated statements of operations.

4. *Cash Equivalents*

Cash equivalents consist of liquid investments with original maturities of three months or less. At December 31, 2018 and 2017, cash equivalents consisted of a money market account.

5. *Accounts Receivable*

Accounts receivable are carried at original amount less an estimate made for doubtful receivables based on a review of all outstanding amounts on a monthly basis. Management determines the allowance for doubtful receivables by regularly evaluating individual customer receivables and considering a customer's financial condition, credit history, and current economic conditions. Accounts receivable are written off when deemed uncollectible. As a result of the payment delays for a large customer, the Company has reserved $1,720,000 and $1,000,000 at December 31, 2018 and 2017, respectively, which represents $100% and 58% of the remaining balance owed under the contract, respectively. Recoveries of accounts receivable previously written off are recorded when received. Accounts receivable at December 31, 2018 and 2017 consisted of the following:

	December 31,	
	2018	**2017**

Accounts receivable - current	$1,587,817	$2,889,731
Accounts receivable - non current	1,720,000	1,760,000
	3,307,817	4,649,731
Allowance for doubtful accounts - current	(13,785)	(13,785)
Allowance for doubtful accounts - non current	(1,720,000)	(1,000,000)
	(1,733,785)	(1,013,785)
Accounts receivable, net of allowances for doubtful accounts	$1,574,032	$3,635,946

The allowance for doubtful accounts for the years ended December 31, 2018 and 2017 is as follows:

	Balance at Beginning of Year	Charged to Costs and Expenses	Deductions From Reserves	Balance at End of Year
Year Ended December 31, 2018				
Allowance for Doubtful Accounts	$1,013,785	$720,000	$ -	$1,733,785
Year Ended December 31, 2017				
Allowance for Doubtful Accounts	$513,785	$500,000	$ -	$1,013,785

The bad debt expense is recorded in selling, general, and administrative expense.

6. *Software License Rights*

Software license rights acquired for re-sale to end users are recorded as assets when purchased and are stated at the lower of cost or estimated net realizable value.

The cost of the software license rights has been initially allocated pro-rata to the maximum number of resalable end-user licenses in the rights contract. Through 2018, licenses were amortized to cost of sales over the greater of the following: 1) an estimate of the economic use of such license rights over a 10 year period with weighting towards the beginning of the term, 2) straight line method over ten years or 3) ratably at cost basis as each end user license is resold to a customer. Management re-evaluates the total sub-licenses it expects to sell during the proceeding twelve months and will adjust the allocation of the current portion vs. non-current portion of software rights.

Amortization began in the first quarter of 2017, with the economic life assumptions that had driven the expense recognition of the license rights over the first few years, and noted the estimates of use were front-end focused as the majority of the expected up-take of the FingerQ technology was predicted to occur during the first 4-5 years of the 10-year life cycle of the product. Based on current sales trends, the company now believes future transactions will be more evenly dispersed over the remaining life cycle of the product, indicating that the straight-line methodology, or greater of actual sales, will more closely align the expense with the remaining useful life of the product. The change in amortization will be effective beginning on January 1, 2019 based on the net remaining software license rights balance.

The rights are also evaluated by management on a periodic basis to determine if estimated future net revenues, on a per sub-license basis, support the recorded basis of each license. If the estimated net revenues are less than the current carrying value of the capitalized software license rights, the Company will reduce the rights to their net realizable value.

7. *Equipment and Leasehold Improvements, Intangible Assets and Depreciation and Amortization*

Equipment and leasehold improvements are stated at cost. Depreciation is provided for in amounts sufficient to relate the cost of depreciable assets to operations over the estimated service lives, principally using straight-line methods. Leasehold improvements are amortized over the shorter of the life of the improvement or the lease term, using the straight-line method.

The estimated useful lives used to compute depreciation and amortization for financial reporting purposes are as follows:

	Years
Equipment and leasehold improvements	
Equipment (years)	3 - 5
Furniture and fixtures (years)	3 - 5
Software (years)	3

Leasehold improvements	life or lease term

Intangible assets consist of patents. Patent costs are capitalized until patents are awarded. Upon award, such costs are amortized using the straight-line method over their respective economic lives. If a patent is denied, all costs are charged to operations in that year.

8. *Impairment or Disposal of Long Lived Assets, including Intangible Assets*

The Company reviews long-lived assets, including intangible assets subject to amortization, whenever events or changes in circumstances indicate that the carrying amount of such an asset may not be recoverable. Recoverability of these assets is measured by comparison of their carrying amount to the future undiscounted cash flows the assets are expected to generate. If such assets are considered impaired, the impairment to be recognized is equal to the amount by which the carrying value of the assets exceeds their fair value determined by either a quoted market price, if any, or a value determined by utilizing a discounted cash flow technique. In assessing recoverability, the Company must make assumptions regarding estimated future cash flows and discount factors. If these estimates or related assumptions change in the future, the Company may be required to record impairment charges. Intangible assets with determinable lives are amortized over their estimated useful lives, based upon the pattern in which the expected benefits will be realized, or on a straight-line basis, whichever is greater. The Company did not record any impairment charges in any of the years presented.

9. *Advertising Expense*

The Company expenses the costs of advertising as incurred. Advertising expenses for 2018 and 2017 were approximately $309,000 and $386,000, respectively.

10. *Deferred Revenue*

Deferred revenue includes customer advances and amounts that have been paid by customer for which the contractual maintenance terms have not yet occurred. The majority of these amounts are related to maintenance contracts for which the revenue is recognized ratably over the applicable term, which generally is 12 months from the date the customer is delivered the products.

11. *Research and Development Expenditures*

Research and development expenses include costs directly attributable to the conduct of research and development programs primarily related to the development of our software products and improving the efficiency and capabilities of our existing software. Such costs include salaries, payroll taxes, employee benefit costs, materials, supplies, depreciation on research equipment, services provided by outside contractors, and the allocable portions of facility costs, such as rent, utilities, insurance, repairs and maintenance, depreciation and general support services. All costs associated with research and development are expensed as incurred.

12. *Earnings Per Share of Common Stock ("EPS")*

The Company's EPS is calculated by dividing net income (loss) applicable to common stockholders by the weighted-average number of common shares outstanding during the reporting period. Diluted EPS includes the effect from potential issuances of common stock, such as stock issuable pursuant to the conversion of preferred stock, exercise of stock options and warrants, when the effect of their inclusion is dilutive. See Note R - Earnings Per Share "EPS" for additional information.

13. *Accounting for Stock-Based Compensation*

The Company accounts for share based compensation in accordance with the provisions of ASC 718-10, "Compensation — Stock Compensation," which requires measurement of compensation cost for all stock awards at fair value on date of grant and recognition of compensation over the service period for awards expected to vest. The majority of its share-based compensation arrangements vest over either a three or four year vesting schedule. The Company expenses its share-based compensation under the ratable method, which treats each vesting tranche as if it were an individual grant. The fair value of stock options is determined using the Black-Scholes valuation model, and requires the input of highly subjective assumptions. These assumptions include estimating the length of time employees will retain their vested stock options before exercising them (the "expected option term"), the estimated volatility of its common stock price over the option's expected term, the risk-free interest rate over the option's expected term, and the Company's expected annual dividend yield. Changes in these subjective assumptions can materially affect the estimate of fair value of stock-based compensation and consequently, the related amount recognized as an expense in the consolidated statements of operations. As required under the accounting rules, the Company reviews its valuation assumptions at each grant date and, as a result, the Company is likely to change its valuation assumptions used to value employee stock-based awards granted in future periods. The values derived from using the Black-Scholes model are recognized as expense over the service period, net of estimated forfeitures (the number of individuals that will ultimately not complete their vesting requirements). The estimation of stock awards that will ultimately vest requires significant judgment. The Company considers many factors when estimating expected forfeitures, including types of awards, employee class, and historical experience. Actual results, and future changes in estimates, may differ substantially from current estimates.

The following table presents share-based compensation expenses included in the Company's consolidated statements of operations:

	Year ended December 31,	
	2018	**2017**
Selling, general and administrative	$855,125	$864,036
Research, development and engineering	125,099	108,728
	$980,224	$972,764

Valuation Assumptions for Stock Options

For 2018 and 2017, 351,918 and 1,234,167 stock options were granted, respectively. The fair value of each option was estimated on the date of grant using the Black-Scholes option-pricing model with the following assumptions:

	Year ended December 31,	
	2018	**2017**
Weighted average Risk free interest rate	2.70%	1.92%
Expected life of options (in years)	4.50	4.51
Expected dividends	0 %	0 %
Weighted average Volatility of stock price	143 %	138 %

The stock volatility for each grant is determined based on the review of the experience of the weighted average of historical daily price changes of the Company's common stock over the expected option term. The expected term was determined using the simplified method for estimating expected option life, which qualify as "plain-vanilla" options; and the risk-free rate is based on the U.S. Treasury yield curve in effect at the time of grant for periods corresponding with the expected life of the option.

14. *Derivative Liabilities*

In connection with the issuances of equity instruments or debt, the Company may issue options or warrants to purchase common stock. In certain circumstances, these options or warrants may be classified as liabilities, rather than as equity. In addition, the equity instrument or debt may contain embedded derivative instruments, such as conversion options or listing requirements, which in certain circumstances may be required to be bifurcated from the associated host instrument and accounted for separately as a derivative liability instrument. The Company early-adopted the new provisions issued July 2017, for derivative liability instruments under FASB ASU 2017-11, Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815): I. Accounting for Certain Financial Instruments with Down Round Features; II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Non-controlling Interests with a Scope Exception. Under ASU 2017-11, down round features do not meet the criteria for derivative accounting and no liability is to be recorded until an actual issuance of securities triggers the down-round feature. Prior to these provisions, the liabilities were recorded without the actual issuance of the securities triggering the down-round feature.

15. *Income Taxes*

The provision for, or benefit from, income taxes includes deferred taxes resulting from the temporary differences in income for financial and tax purposes using the liability method. Such temporary differences result primarily from the differences in the carrying value of assets and liabilities. Future realization of deferred income tax assets requires sufficient taxable income within the carryback, carryforward period available under tax law. The Company evaluates, on a quarterly basis whether, based on all available evidence, if it is probable that the deferred income tax assets are realizable. Valuation allowances are established when it is more likely than not that the tax benefit of the deferred tax asset will not be realized. The evaluation, as prescribed by ASC 740-10, “Income Taxes,” includes the consideration of all available evidence, both positive and negative, regarding historical operating results including recent years with reported losses, the estimated timing of future reversals of existing taxable temporary differences, estimated future taxable income exclusive of reversing temporary differences and carryforwards, and potential tax planning strategies which may be employed to prevent an operating loss or tax credit carryforward from expiring unused. Because of the Company’s historical performance and estimated future taxable income, a full valuation allowance has been established.

The Company accounts for uncertain tax provisions in accordance with ASC 740-10-05, “Accounting for Uncertainty in Income Taxes.” The ASC clarifies the accounting for uncertainty in income taxes recognized in an enterprise’s financial statements. The ASC prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. The ASC provides guidance on de-recognition, classification, interest and penalties, accounting in interim periods, disclosure and transition.

16. *Recent Accounting Pronouncements*

In May 2014, ASU No. 2014-09, “Revenue from Contracts with Customers” was issued. The Company adopted ASU 2014-09 and its related amendments (collectively known as ASC 606) effective on January 1, 2018 using the modified retrospective method. Please see Note B "Revenue from Contracts with Customers" for the required disclosures related to the impact of adopting this standard and a discussion of the Company's updated policies related to revenue recognition and accounting for costs to obtain and fulfill a customer contract.

In February 2016, the FASB issued ASU 2016-02, “Leases”. The new standard establishes a right-of-use (ROU) model that requires a lessee to record a ROU asset and a lease liability on the balance sheet for all leases with terms longer than 12 months. Leases will be classified as either finance or operating, with classification affecting the pattern of expense recognition in the income statement. The Company will adopt the new standard as of January 1, 2019 and will recognize a cumulative-effect adjustment to the opening balance of accumulated deficit as of the adoption date. The Company will elect the optional transition approach to not apply ASU 2016-02 in the comparative periods presented and the package of practical expedients. The Company will also elect the practical expedient to not account for lease and non-lease components separately for office space, data center and equipment operating leases. The Company is currently evaluating the impact of its pending adoption of the new standard on its consolidated financial statements, but expects that it will increase its assets and liabilities for amounts yet to be determined, but does not expect ASU 2016-02 to have an impact on its results of operations or cash flows. The Company does not expect the cumulative effect adjustment to the opening balance of retained earnings at January 1, 2019 to be material.

In July 2017, the FASB issued ASU 2017-11, Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815): I. Accounting for Certain Financial Instruments with Down Round Features; II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Non-controlling Interests with a Scope Exception. Part I of this update addresses the complexity of accounting for certain financial instruments with down round features. Down round features are features of certain equity-linked instruments (or embedded features) that result in the strike price being reduced on the basis of the pricing of future equity offerings. Current accounting guidance creates cost and complexity for entities that issue financial instruments (such as warrants and convertible instruments) with down round features that require fair value measurement of the entire instrument or conversion option. Under ASU 2017-11, down round features do not meet the criteria for derivative accounting and no liability is to be recorded until an actual issuance of securities triggers the down-round feature. Part II of this update addresses the difficulty of navigating Topic 480, Distinguishing Liabilities from Equity, because of the existence of extensive pending content in the FASB Accounting Standards Codification. This pending content is the result of the indefinite deferral of accounting requirements about mandatorily redeemable financial instruments of certain nonpublic entities and certain mandatorily redeemable non-controlling interests. The amendments in Part II of this update do not have an accounting effect. This ASU is effective for fiscal years, and interim periods within those years, beginning after December 15, 2018, with early adoption permitted. The adoption of ASU 2017-11, during the fiscal 2017 year did not have any impact on the consolidated financial statements, except for recording the deemed dividend in 2018 from triggering the anti-dilution provision feature and updating our disclosures with respect to equity instruments with down round features. See Note O for updated disclosures.

In August 2018, the FASB issued ASU No. 2018-15, Customer's Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract ("ASU 2018-15"). ASU 2018-15 aligns the requirements for capitalizing implementation costs incurred in a hosting arrangement that is a service contract with the requirements for capitalizing implementation costs incurred to develop or obtain internal-use software. The update to the standard is effective for interim and annual periods beginning after December 15, 2019, with early adoption permitted. Entities can choose to adopt the ASU 2018-15 prospectively or retrospectively. The Company is currently assessing the impact ASU 2018-15 will have on its consolidated financial statements.

Management does not believe that any other recently issued, but not yet effective, accounting standard if currently adopted would have a material effect on the accompanying consolidated financial statements.

NOTE B—REVENUE FROM CONTRACTS WITH CUSTOMERS

The Company adopted ASC 606 on January 1, 2018 using the modified retrospective method for all contracts not completed as of the date of adoption.

Disaggregation of Revenue

The following table summarizes revenue from contracts with customers for the years ended:

	North America	**South America**	**EMEA***	**Asia**	**December 31, 2018**
License fees	$318,271	$32,000	$278,516	$1,111,110	$1,739,897
Hardware	439,480	53,200	477,674	321,715	1,292,069
Support and Maintenance	805,800	665	60,820	27,321	894,606
Professional services	115,970	-	2,000	-	117,970
Total Revenues	$1,679,521	$85,865	$819,010	$1,460,146	$4,044,542

	North	**South**	**EMEA***	**Asia**

	America	America			December 31, 2017
License fees	$3,104,509	$ 583	$4,279	$111,000	$3,220,371
Hardware	1,190,500	2,341	8,252	688,330	1,889,423
Support and Maintenance	458,340	2,364	37,907	2,367	500,978
Professional services	686,812	-	-	5,400	692,212
Total Revenues	$5,440,161	$ 5,288	$50,438	$807,097	$6,302,984

* EMEA – Europe, Middle East, Africa

Financial Statement Impact of Adopting ASC 606

The Company adopted ASC 606 using the modified retrospective method. The cumulative effect of applying the new guidance to all contracts with customers that were not completed as of January 1, 2018 was recorded as an adjustment to accumulated deficit as of the adoption date. The cost of obtaining the contract reflects the outcome of the sales effort in educating, demonstrating and selling our solutions. Accordingly under ASC 606, commissions are a capitalized cost due to the acquisition of a new customer.

As a result of applying the modified retrospective method to adopt the new revenue guidance, the following adjustments were made to the following select condensed consolidated balance sheet line items as of January 1, 2018:

	As reported - December 31, 2017	**Adjustments**	**As adjusted - January 1, 2018**
Capitalized contract assets	$-	$ 240,017	$240,017
Total assets	$16,078,822	$ 240,017	$16,318,839
Accumulated deficit	$(67,076,492)	$ 240,017	$(66,836,475)
Total Stockholders' Equity	$13,753,295	$ 240,017	$13,993,312
Total Liabilities and Stockholders' Equity	$16,078,822	$ 240,017	$16,318,839

Impact of New Revenue Guidance on Financial Statement Line Items

The following table compares selected reported condensed consolidated balance sheet, statement of operations and cash flows, as of and for the year ended December 31, 2018, to the pro-forma amounts had the previous guidance still been applied:

	As of December 31, 2018		
	As reported	**Pro-forma**	**Increase (decrease)**
Consolidated balance sheet data:			
Capitalized contract costs, net	$319,199	$ -	$(319,199)

	Year Ended December 31, 2018		
	As reported	**Pro-forma**	**Increase (decrease)**
Consolidated statement of operations data:			
Selling, general and administrative expenses	5,333,906	5,413,088	79,182

Net loss	(6,868,875)	(6,948,057)	(79,182)
Net loss available to common stockholders	(8,495,874)	(8,575,056)	(79,182)
Basic & Diluted Loss per Common Share	(0.73)	(0.74)	0.00

	Year Ended December 31, 2018		
	As reported	**Pro-forma**	**Increase (decrease)**
Consolidated statement of cash flow data:			
Net loss	(6,868,875)	(6,948,057)	(79,182)
Change in contract assets	(79,182)	-	79,182
Net cash used by operating activities	(1,613,475)	(1,613,475)	-

Revenue recognized during the year ended December 31, 2018 from amounts included in deferred revenue at the beginning of the period was approximately $382,000 respectively. The Company did not recognize any revenue from performance obligations satisfied in prior periods. Total deferred revenue (contract liability) was $196,609 and $507,866 at December 31, 2018 and December 31, 2017, respectively.

Transaction Price Allocated to the Remaining Performance Obligations

ASC 606 requires that the Company disclose the aggregate amount of transaction price that is allocated to performance obligations that have not yet been satisfied as at December 31, 2018. The guidance provides certain practical expedients that limit this requirement, which the Company's contracts meet as follows:

The performance obligation is part of a contract that has an original expected duration of one year or less, in accordance with ASC 606-10-50-14.

At December 31, 2018 deferred revenue represents our remaining performance obligations related to prepaid support and maintenance, all of which is expected to be recognized within one year.

NOTE C—FACTORING

Due from factor consisted of the following as of December 31:

	Original Invoice Value	Factored Amount	Factored Balance due
Year Ended December 31, 2018			
Factored accounts receivable	$221,120	$164,438	$56,682
Year Ended December 31, 2017			
Factored accounts receivable	$423,349	$313,484	$109,865

The Company entered into an accounts receivable factoring arrangement with a financial institution (the "Factor") which has been extended to October 31, 2019. Pursuant to the terms of the arrangement, the Company, from time to time, sells to the Factor a minimum of $150,000 per quarter of certain of its accounts receivable balances on a non-recourse basis for credit approved accounts. The Factor remits 35% of the foreign and 75% of the domestic accounts receivable balance to the Company (the "Advance Amount"), with the remaining balance, less fees to be forwarded to the Company once the Factor collects the full accounts receivable balance from the customer. In addition, the Company, from time to time, receives over advances from the factor. Factoring fees range from 2.75% to 15% of the face value of the invoice factored, and are determined by the number of days required for collection of the invoice. The cost of factoring is included in selling, general and administrative expenses. The cost of factoring was as follows:

	Years Ended December 31,	
	2018	2017
Factoring fees	$186,845	$224,142

NOTE D—FAIR VALUES OF FINANCIAL INSTRUMENTS

Cash and cash equivalents, accounts receivable, inventory, due from factor, accounts payable and accrued liabilities are carried at, or approximate, fair value because of their short-term nature.

NOTE E—CONCENTRATION OF RISK

Financial instruments which potentially subject the Company to risk primarily consist of cash and accounts receivables.

The Company maintains its cash and cash equivalents with various financial institutions, which, at times may exceed the amounts insured by the Federal Deposit Insurance Corporation. The exposure to the Company is solely dependent upon daily bank balances and the respective strength of the financial institutions. No amounts were in excess of coverage at December 31, 2018 and 2017. The Company has not incurred any losses on these accounts.

The Company extends credit to customers on an unsecured basis in the normal course of business. The Company's policy is to perform an analysis of the recoverability of its receivables at the end of each reporting period and to establish allowances where appropriate. The Company analyzes historical bad debts and contract losses, customer concentrations, and customer credit-worthiness when evaluating the adequacy of the allowances.

The Company had certain customers whose revenue individually represented 10% or more of the Company's total revenue, as follows:

	Years Ended December 31,	
	2018	**2017**
Customer A	27 %	*
Customer B	14 %	54 %
Customer C	13 %	*

* Less than 10% of total revenue

The Company had certain customers whose accounts receivable balances individually represented 10% or more of the Company's total current accounts receivable, as follows:

	As of December 31,	
	2018	**2017**
Customer A	70 %	*
Customer B	*	87 %

The long term accounts receivable is represented by one customer in amount of $1,720,000 which has been past due per the terms of the invoice for forty-two months as of December 31, 2018. The Company has reserved $1,720,000 and $1,000,000 which represents 100% and 58% of the remaining balance owed under the contract.

* Less than 10% of total accounts receivable

NOTE F—INVENTORY

Inventory is stated at the lower of cost, determined on a first in, first out basis, or realizable value, and consists primarily of fabricated assemblies and finished goods. Inventory is comprised of the following as of December 31:

	2018	**2017**
Current		
Finished goods	496,358	487,858
Fabricated assemblies	502,471	458,989
Total current inventory	$998,829	$946,847

NOTE G—RESALABLE SOFTWARE LICENSES RIGHTS

On November 11, 2015, the Company entered into a license agreement for the rights to all software and documentation regarding the technology currently known as or offered under the FingerQ name. The license agreement grants the Company the exclusive right to reproduce, create derivative works and distribute copies of the FingerQ software and documentation, create new FingerQ related products, and grant sub-licenses of the licensed technology to end users. The license rights have been granted to the Company in perpetuity, with a stated number of end-user resale sub-licenses allowed under the contract for a total of $12,000,000. The cost of sub-license rights expected to be amortized in the following 12 months is $1,125,000 and is classified as current, with remainder as non-current.

The Company has determined the software license rights to be a finite lived intangible asset, and estimated that the software license rights shall be economically used over a 10 year period, with a weighting towards the beginning years of that time-frame. The license rights were acquired during the fourth quarter of 2015, but the usage of such rights in the Company’s products was not generally available until January 2017. Accordingly, amortization began in the first quarter of 2017.

Through 2018, the remaining license rights were amortized over the greater of the following amounts: 1) an estimate of the economic use of such license rights, 2) the amount calculated by the straight line method over ten years or 3) the actual cost basis of sales usage of such rights. The Company believes categorizing the amortization expense under Cost of Sales more closely reflects the nature of the license right arrangement and the use of the technology. A total of $2,640,000 and $1,556,687 was expensed during the twelve month periods ended December 31, 2018 and 2017, respectively. The 2018 expense was recorded based on the economic use model. Since the license purchase, a cumulative amount of $4,198,596 has been expensed, with a carrying balance of $7,801,404 as of December 31, 2018. Based on current sales, the Company believes that the economic use was front-end focused as the majority of the expected up-take of the FingerQ technology was predicted to occur during the first 4-5 years of the 10-year life cycle of the product. Based on current sales trends, the company now believes future transactions will be more evenly dispersed over the remaining life cycle of the product, indicating that the straight-line methodology, or greater of actual sales, will more closely align the expense with the remaining useful life of the product. The change in amortization will be effective beginning on January 1, 2019 based on the net remaining software license rights balance.

On December 31, 2015, the Company purchased third-party software licenses in the amount of $180,000 in anticipation of a large pending deployment that has yet to materialize. The Company is amortizing the total cost over the same methodology described above with the greatest of the three approaches being the actual sales through 2018. A total of $18,198 (net of credits of $14,400) and $35,916 was expensed during the twelve month periods ended December 31, 2018 and 2017, respectively. Since the license purchase, the actual per unit cost (actual usage) of such license rights in the cumulative amount of $65,794 net of credits has been expensed, with a carrying balance of $114,206 as of December 31, 2018. The Company has classified the balance as non-current until a larger deployment occurs. Software license rights is comprised of the following as of:

	2018	**2017**
Current software license rights	$1,125,000	$2,640,000
Non-current software license rights	6,790,610	7,933,808
Total software license rights	$7,915,610	$10,573,808

During the year ended December 31, 2018, there were no events or changes in circumstances that indicated the carrying amount of the software license rights may not be recoverable from their undiscounted cash flows. Consequently, we did not perform an impairment test. The Company did not record an impairment loss related to the software license rights during the years ended December 31, 2018 and 2017.

Estimated minimum amortization expense based on straight line amortization of the software license rights for each of the next five years and thereafter approximates the following:

Years ending December 31

2019	1,125,000*
2020	1,114,500
2021	1,114,500
2022	1,114,500
2023	1,114,500
Thereafter	2,332,610

* - Includes increase vs. straight line due to expected deployment of second tranche of licenses from fourth quarter 2018 order.

NOTE H—EQUIPMENT AND LEASEHOLD IMPROVEMENTS

Equipment and leasehold improvements consisted of the following as of December 31:

	2018	**2017**
Equipment	$619,533	$567,473
Furniture and fixtures	164,079	164,079
Software	32,045	32,045
Leasehold improvements	23,403	23,403
	839,060	787,000
Less accumulated depreciation and amortization	(690,452)	(605,835)
Total	$148,608	$181,165

Depreciation was $84,617 and $52,709 for 2018 and 2017, respectively. Amounts are recorded in Selling, General, and Administrative Expense and Cost of Services.

NOTE I—INTANGIBLE ASSETS

Intangible assets consisted of the following as of December 31:

	2018			2017		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
Patents and patents pending	$378,344	$ (182,438)	$195,906	$347,946	$ (166,842)	$181,104
Total	$378,344	$ (182,438)	$195,906	$347,946	$ (166,842)	$181,104

Aggregate amortization expense for 2018 and 2017 was $15,596 and $13,726, respectively. Amounts are recorded in Research, Development and engineering expense. The estimated aggregate amortization expense of intangible assets for the years following December 31, 2018 is approximately $13,000 per year for 2019 through 2023, and approximately $131,000 thereafter.

NOTE J—ACCRUED LIABILITIES

Accrued liabilities consisted of the following as of December 31:

	2018	2017
Compensation	$224,135	$341,884
Compensated absences	154,169	164,132
Accrued legal and accounting fees	77,133	85,633
Sales tax payable	9,436	5,614
Factoring fees	19,000	32,357
Other	64,359	58,403

Total	$548,232	$688,023

NOTE K—RELATED PARTY

Licensing Agreement with Subsidiaries of China Goldjoy Group Limited.

On November 11, 2015, BIO-key Hong Kong Limited, a subsidiary of the Company, entered into a license purchase agreement with certain subsidiaries of China Goldjoy Group Limited (“CGG”). The license agreement provides for the grant of a perpetual, irrevocable, exclusive, worldwide, fully-paid license to all software and documentation regarding the software code, toolkit, electronic libraries and related technology currently known as or offered under the Finger Q name, together with perpetual license under all related patents held by the licensors and any other intellectual property rights owned by the licensors related to the forgoing software. The Company made a one-time payment of $12,000,000 to the licensors. Mr. Yao Jianhu is the chairman and chief executive officer of CGG and a director of the Company. Mr. Wong Kwok Fong served as the chief technology officer of CGG through October 2016 and is the beneficial owner of 31.4% of the Company’s common stock, and a director and executive officer of the Company.

Securities Purchase Agreements with Wong Kwok Fong

On April 28, 2017, the Company issued to Wong Kwok Fong, a director and executive officer of the Company, 277,778 shares of common stock at a purchase price of $3.60 per share for gross cash proceeds of $1,000,000.

On September 22, 2017, the Company issued to Wong Kwok Fong, a director and executive officer of the Company, 427,778 shares of common stock and warrants to purchase 138,889 shares of common stock for the aggregate purchase price of $1,540,000, or $3.60 per share. The purchase price was paid via a cash payment of $1,000,000 for 277,778 shares of common stock, and the conversion of an accrued dividend payable in the amount of $540,000 on the Company's Series A-1 Convertible Preferred Stock for 150,000 shares of common stock.

On August 7, 2017, the Company received written notice from Wong Kwok Fong, the holder of an aggregate of 90,000 shares of the Company's Series A-1 Convertible Preferred Stock, of his desire to increase the maximum percentage of shares of common stock issuable upon conversion of the Series A-1 Convertible Preferred Stock from 9.99% to 35%. The Company waived a standstill provision to permit such increase. In accordance with the Certificate of Designation of the Series A-1 Shares, such notice became effective on the 61st day following the date such notice was provided to the Company.

On October 17, 2017, Wong Kwok Fong converted 27,404 of the Series A-1 Shares at a conversion price of $3.60 per share resulting in the acquisition of 761,222 shares of the Company's Common Stock.

On April 3, 2018, Wong Kwok Fong converted 39,088 of the Series A-1 Shares at a conversion price of $3.60 per share and $330,552 of accrued dividends payable, resulting in the acquisition of 1,177,598 shares of the Company's Common Stock.

On May 31, 2018 Wong Kwok Fong converted 23,508 of the Series A-1 Shares at a conversion price of $3.60 per share and $25,463 of accrued dividends payable, resulting in the acquisition of 660,073 shares of the Company's Common Stock.

NOTE L—DEFERRED REVENUE

Deferred revenue represents unearned revenue from customer prepayments prior to maintenance contractual term. Maintenance contracts include provisions for unspecified when-and-if available product updates and customer telephone support services, and are recognized ratably over the term of the service period. At December 31, 2018 and 2017, amounts in deferred revenue were approximately $197,000 and $508,000, respectively.

NOTE M—COMMITMENTS AND CONTINGENCIES

Operating Leases

The Company does not own any real estate but conducts operations from three leased premises. These non-cancelable operating leases expire at various dates through 2023. In addition to base rent, the Company pays for property taxes, maintenance, insurance and other occupancy expenses according to the terms of the individual leases.

Future minimum rental commitments of non-cancelable operating leases are approximately as follows:

Years ending December 31,	
2019	192,000
2020	156,000
2021	127,000
2022	131,000
2023	89,000
	$695,000

Rental expense was approximately $234,000 and $221,000 during 2018 and 2017, respectively. Amounts are recorded in Selling, General, and administrative expenses.

Litigation

From time to time, we may be involved in litigation relating to claims arising out of our operations in the normal course of business. As of December 31, 2018, the Company was not a party to any pending lawsuits.

NOTE N— EQUITY

1. Preferred Stock

Within the limits and restrictions provided in the Company's Certificate of Incorporation, the Board of Directors has the authority, without further action by the shareholders, to issue up to 5,000,000 shares of preferred stock, $.0001 par value per share, in one or more series, and to fix, as to any such series, any dividend rate, redemption price, preference on liquidation or dissolution, sinking fund terms, conversion rights, voting rights, and any other preference or special rights and qualifications. As of December 31, 2018, 100,000 shares of preferred stock have been designated as Series A-1 Convertible Preferred Stock, of which 90,000 were issued in 2015 and 0 remain outstanding as of December 31, 2018, and 105,000 shares of preferred stock have been designated as Series B-1 Convertible Preferred Stock, of which 105,000 were issued in 2015 and 0 remain outstanding as of December 31, 2018.

Series A-1 Convertible Preferred Stock

On October 22 and 29, 2015, the Company issued 84,500 shares of Series A-1 Convertible Preferred Stock ("Series A-1 Stock") at a purchase price of $100.00 per share, for aggregate gross proceeds of $8,450,000. On November 11, 2015, 5,500 additional shares of Series A-1 Stock were issued at a purchase price of $100.00 per share, for gross cash proceeds of $550,000. Shares of Series A-1 Stock were convertible at any time at the option of the holder into shares of common stock by dividing the Series A-1 Original Issue Price by an initial conversion price of $3.60 per share, subject to adjustment for stock dividends, stock splits, combinations, and reclassifications of the Company's capital stock, and subject to a "blocker provision" which prohibits conversion if such conversion would result in the holder being the beneficial owner of in excess of 9.99% of the Company's common stock. In connection with the request of the sole holder of the Series A-1 Stock, on August 7, 2017 the Company waived a standstill agreement to permit the holder to increase his conversion cap to 35% effective 61 days after such waiver request. The Series A-1 Stock accrued dividends at the rate of 6% per annum payable quarterly on April 1, July, 1, October 1, and January 1 of each year. Until October 1, 2017, the dividends were payable in cash provided that if payment in cash would be prohibited under applicable Delaware corporation law or cause the Company to breach any agreement for borrowed money, such dividends would be payable in kind through the issuance of additional shares of common stock having a value equal to the volume weighted average trading price of the Company's common stock for the ten (10) days preceding the applicable dividend payment date. Commencing January 1, 2018, dividends were payable at the option of the Company in cash or kind through the issuance of additional shares of common valued as described above.

The holders of the Series A-1 Stock were entitled to designate one person to serve on the Board of Directors of the Company. The holders of the Series A-1 Stock were entitled to vote on an as converted to common stock basis together with the holders of our common stock on all matters presented to our stockholders. Upon any liquidation or dissolution of the Company, any merger or consolidation involving the Company or any subsidiary of the Company in

which the shares of capital stock of the Company outstanding immediately prior to such merger or consolidation do not represent immediately following such merger or consolidation at least a majority of the voting power of the capital stock of the resulting or surviving corporation, or the sale of all or substantially all assets in a single transaction or a series of related transactions, unless the holders of at least a majority of the outstanding Series A-1 Stock elected otherwise, holders of Series A-1 Stock would have been entitled to receive prior to any payment to any holders of the Company's common stock an amount per share equal to $100.00 per share plus any declared and unpaid dividends (pari-passu with the Series B-1 holders).

Between September 22, 2017 and May 31, 2018, the holder of the Series A-1 Stock converted all shares of Series A-1 Stock into an aggregate of 2,500,000 shares of common stock and purchased an aggregate of 248,893 shares of common stock in consideration of the conversion of $896,015 of accrued dividends payable on the Series A-1 Stock

As a result of the forgoing conversions, there are no longer any issued and outstanding shares of Series A-1 Stock as of December 31, 2018.

Overall balances and conversion of Series A-1 shares and accrued dividends into common stock has been as follows:

	Series A-1	**Accrued Dividends**
Balance – January 1, 2017	90,000	$ 270,000
Accrual of dividends – Q1 2017		135,000
Accrual of dividends – Q2 2017		135,000
Accrual of dividends – Q3 2017		135,000
Conversion into common stock – September 2017	-	(540,000)
Conversion into common stock – October 2017	(27,404)	-
Accrual of dividends – Q4 2017		101,658
Balance – December 31, 2017	62,596	$ 236,658
Accrual of dividends – Q1 2018		93,894
Conversion into common stock – April 2018	(39,088)	(330,552)
Accrual of dividends – Q2 2018 (until final conversion)		25,463
Conversion into common stock – May 2018	(23,508)	(25,463)
Balance – December 31, 2018	-	$ -

The Series A-1 Stock contained options that based on an evaluation of FASB ASC 815-15, “Embedded Derivatives” and FASB ASC 815-40-15, “Contracts in Entity’s Own Equity - Scope and Scope Exceptions,” are considered embedded features: Preferred Stock’s conversion option: The Series A-1 Stock was convertible at the holder’s option at any time at the fixed conversion price of $3.60 per share; Quarterly Dividend Conversion Option: From issuance until December 31, 2017, the majority of holders could have elected to have the quarterly dividend payment made in shares of common stock, having a value equal to the volume weighted average trading price of the common stock during the ten (10) trading day period preceding the applicable dividend payment date. These features were analyzed by the Company and determined that they were not required to be bifurcated from the preferred stock and recorded as derivatives as they are clearly and closely related to an equity host.

Series B-1 Convertible Preferred Stock

On November 11, 2015, the Company issued 105,000 shares of Series B-1 Convertible Preferred Stock (the “Series B-1 Stock”) at a purchase price of $100.00 per share, for gross proceeds of $10,500,000. Shares of the Series B-1 Stock were convertible at any time at the option of the holder into shares of common stock by dividing the Series B-1 Original Issue Price by an initial conversion price of $3.60 per share, subject to adjustment for stock dividends, stock splits, combinations, and reclassifications of the Company’s capital stock, and subject to a “blocker provision” which prohibits conversion if such conversion would result in the holder being the beneficial owner of in excess of 9.99% of the Company’s common stock. During a conversion detailed in the table below, the Company waived a standstill provision to permit a holder of Series B-1 Stock to increase its conversion limitation to 19.99% of the Company's issued and outstanding shares of common stock to be effective 61 days after such waiver. The Series B-1 Stock accrued dividends at the rate of 2.5% per annum payable quarterly on April 1, July, 1, October 1, and January 1 of each year payable in cash provided that if payment in cash would be prohibited under applicable Delaware corporation law or cause the Company to breach any agreement for borrowed money, or if the majority of the outstanding shares of the Series B-1 Stock elected otherwise, such dividends were payable in kind through the issuance of additional shares of common stock having a value equal to the volume weighted average trading price of the Company’s common stock for the ten (10) days preceding the applicable dividend payment date.

The holders of the Series B-1 Stock were entitled to designate one person to serve on the Board of Directors of the Company. The holders of the Series B-1 Stock were entitled to vote on an as converted to common stock basis together with the holders of our common stock on all matters presented to our stockholders. Upon any liquidation or dissolution of the Company, any merger or consolidation involving the Company or any subsidiary of the Company in which the shares of capital stock of the Company outstanding immediately prior to such merger or consolidation do not represent immediately following such merger or consolidation at least a majority of the voting power of the capital stock of the resulting or surviving corporation, or the sale of all or substantially all assets in a single transaction or a series of related transactions, unless the holders of at least a majority of the outstanding Series B-1 Stock elected otherwise, holders of Series B-1 Stock would have been be entitled to receive prior to any payment to any holders of the Company’s common stock an amount per share equal to $100.00 per share plus any declared and unpaid dividends (pari-passu with the Series A-1 holders).

Between March 23, 2018 and May 23, 2018, holders of shares of Series B-1 Stock converted all shares of Series B-1 Stock into an aggregate of 2,916,668 shares of common stock and purchased an aggregate of 131,229 shares of common stock in consideration of the conversion of $472,426 of accrued dividends payable on the Series B-1 Stock.

As a result of the forgoing conversions, there are no longer any issued and outstanding shares of Series B-1 Stock as of December 31, 2018.

Overall balances and conversion of Series B-1 shares and accrued dividends into common stock has been as follows:

	Series B-1	**Accrued Dividends**
Balance – January 1, 2017	105,000	$ 131,250
Accrual of dividends – Q1 2017		65,625
Accrual of dividends – Q2 2017		65,625
Accrual of dividends – Q3 2017		65,625
Accrual of dividends – Q4 2017		65,625
Balance – December 31, 2017	105,000	393,750
Conversion into common stock – March 2018	(60,420)	(417,084)
Accrual of dividends – Q1 2018		62,268
Accrual of dividends – Q2 2018 (until final conversion)		16,408
Conversion into common stock – May 2018	(44,580)	(55,342)
Balance – December 31, 2018	-	$ -

The Series B-1 Stock contained options that based on an evaluation of FASB ASC 815-15, “Embedded Derivatives” and FASB ASC 815-40-15, “Contracts in Entity’s Own Equity - Scope and Scope Exceptions,” are considered embedded features: Preferred Stock’s conversion option: The Series B-1 Stock was convertible at the holder’s option at any time at the fixed conversion price of $3.60 per share; Quarterly Dividend Conversion Option: The majority of holders could have elect to have the quarterly dividend payment made in shares of common stock, having a value equal to the volume weighted average trading price of the common stock during the ten (10) trading day period preceding the applicable dividend payment date. These features were analyzed by the Company and determined that they were not required to be bifurcated from the preferred stock and recorded as derivatives as they are clearly and closely related to an equity host.

2. Common Stock

Holders of common stock have equal rights to receive dividends when, as and if declared by the Board of Directors, out of funds legally available therefor. Holders of common stock have one vote for each share held of record and do not have cumulative voting rights.

Holders of common stock are entitled, upon liquidation of the Company, to share ratably in the net assets available for distribution, subject to the rights, if any, of holders of any preferred stock then outstanding. Shares of common stock are not redeemable and have no preemptive or similar rights. All outstanding shares of common stock are fully paid and nonassessable.

Issuances of Common Stock

On March 23, 2018, the holders of Series B-1 Stock converted shares and accrued dividends payable into a total of 1,794,190 shares of common stock.

On April 3, 2018, the holder of Series A-1 Stock converted shares and accrued dividends payable into a total of 1,177,598 shares of common stock.

On May 23, 2018, the holders of Series B-1 Stock converted shares and accrued dividends payable into a total of 1,253,707 shares of common stock.

On May 31, 2018, the holder of Series A-1 Stock converted shares and accrued dividends payable into a total of 660,073 shares of common stock.

On August 22, 2018, the Company entered into an underwriting agreement (the "Underwriting Agreement") with Maxim Group LLC (the "Underwriter") with respect to the issuance and sale of an aggregate of 1,200,000 units ("Units") with each unit consisting of one share of common stock and a warrant to purchase 0.75 shares of common stock at an exercise price of $1.50 per share, in an underwritten public offering pursuant to the Underwriting Agreement. Each Unit was sold for a price of $1.50. The Warrants have a term of five years and are immediately exercisable. Pursuant to the Underwriting Agreement, the Company granted the Underwriters a 45-day option to purchase up to an additional 180,000 shares of Common Stock and/or 135,000 Warrants to cover over-allotments, if any (the "Over-Allotment"). On August 22, 2018, the Underwriter exercised its Over-Allotment option in full on both the Common Stock and the Warrants. Pursuant to this agreement, 1,380,000 shares of common stock and warrants to purchase 1,035,000 shares of stock were issued on August 24, 2018 for aggregate gross proceeds of $2,070,000. The gross proceeds were reduced by a 7% commission ($144,900) and $50,000 of underwriting expenses to net to $1,875,100 cash received.

Costs of $143,945 were incurred during 2018 in relation to the issuance of common stock.

Issuances to Directors, Executive Officers and Consultants

During the year ended December 31, 2018, the Company issued 20,976 shares of common stock to its directors in lieu of payment of board fees, valued at $37,532.

During the year ended December 31, 2017, the Company issued 11,244 shares of common stock to its directors in lieu of payment of board fees, valued at $32,030.

During the year ended December 31, 2017, the Company issued 117,849 shares of common stock to consultancy firms in lieu of payment for services. The fair value at issuance was $354,585 and was expensed over the period of the services.

Employees' exercise options

During 2018, no employee stock options were exercised. There were 4,167 employee stock options exercised resulting in the cashless issuance of 1,610 shares of common stock during 2017.

Derivative Liabilities

In connection with the issuances of equity instruments or debt, the Company may issue options or warrants to purchase common stock. In certain circumstances, these options or warrants may be classified as liabilities, rather than as equity. In addition, the equity instrument or debt may contain embedded derivative instruments, such as conversion options or listing requirements, which in certain circumstances may be required to be bifurcated from the associated host instrument and accounted for separately as a derivative liability instrument. The Company early-adopted the new provisions issued July 2017, for derivative liability instruments under FASB ASU 2017-11, Earnings Per Share (Topic 260), Distinguishing Liabilities from Equity (Topic 480) and Derivatives and Hedging (Topic 815): I. Accounting for Certain Financial Instruments with Down Round Features; II. Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Non-controlling Interests with a Scope Exception. Under ASU 2017-11, down round features do not meet the criteria for derivative accounting and no liability is to be recorded until an actual issuance of securities triggers the down-round feature. Prior to these provisions, the liabilities were recorded without the actual issuance of the securities triggering the down-round feature.

Securities Purchase Agreement dated November 13, 2014

Pursuant to a Securities Purchase Agreement, dated November 13, 2014, by and between the Company and a number of private and institutional investors, the Company issued to certain private investors 664,584 shares of common stock and warrants to purchase an additional 996,877 shares of common stock for aggregate gross proceeds of $1,595,000.

The warrants have a term of five years and an initial exercise price of $3.60 per share, and have been fully exercisable since February 2015. The warrants have customary anti-dilution protections including a "full ratchet" anti-dilution adjustment provision which are triggered in the event the Company sells or grants any additional shares of common stock, options, warrants or other securities that are convertible into common stock at a price lower than $3.60 per share, The anti-dilution adjustment provision is not triggered by certain "exempt issuances" which among other issuances, includes the issuance of shares of common stock, options or other securities to officers, employees, directors, consultants or service providers.

Pursuant to the Underwriting Agreement with Maxim Group, on August 24, 2018 the Company issued Common Stock and Warrants to investors at a purchase price of $1.50 per unit which triggered the anti-dilution protection provision under this Securities Purchase Agreement. Due to this provision, the total number of outstanding and fully vested warrants was increased from 996,877 to 2,392,502, and the exercise price was reduced from $3.60 to $1.50 per share. The Company recognized a non-cash deemed dividend of $1,288,139 in connection with these adjustments.

As a result of the early adoption of ASU 2017-11, the “full ratchet” anti-dilution feature is no longer a determinant for derivative liability accounting. As the “full ratchet” anti-dilution feature was determined to have no value in the past, the adoption had no effect on the balance sheets or statements of operations.

Securities Purchase Agreement dated September 23, 2015

On September 23, 2015, the Company issued a warrant to purchase 69,445 shares of common stock in connection with the issuance of a promissory note. The warrants are immediately exercisable at an initial exercise price of $3.60 per share and have a term of five years.

The warrants have customary anti-dilution protections including a "full ratchet" anti-dilution adjustment provision which are triggered in the event the Company sells or grants any additional shares of common stock, options, warrants or other securities that are convertible into common stock at a price lower than $3.60 per share. The anti-dilution adjustment provision is not triggered by certain "exempt issuances" which among other issuances, includes the issuance of shares of common stock, options or other securities to officers, employees, directors, consultants or service providers.

Pursuant to the Underwriting Agreement with Maxim Group, on August 24, 2018 the Company issued Common Stock and Warrants to the investors at a purchase price of $1.50 per unit which triggered the anti-dilution protection provision under this Securities Purchase Agreement. Due to this provision, the total number of outstanding and fully vested warrants for the investor was increased from 69,445 to 166,668, and the exercise price was reduced from $3.60 to $1.50 per share. The Company recognized a non-cash deemed dividend of $140,827 in connection with these adjustments.

As a result of the early adoption of ASU 2017-11, the “full ratchet” anti-dilution feature is no longer a determinant for derivative liability accounting. As the “full ratchet” anti-dilution feature was determined to have no value in the past, the adoption had no effect on the balance sheets or statements of operations.

3. Warrants

The Company has issued warrants to certain creditors, investors, investment bankers and consultants. A summary of warrant activity is as follows:

	Total Warrants	Weighted average exercise price	Weighted average remaining life (in years)	Aggregate intrinsic value
Outstanding, as of December 31, 2016	1,260,080	3.84	2.78	
Granted	138,889	3.60		
Exercised	—	—		
Forfeited	—	—		
Expired	—	—		
Outstanding, as of December 31, 2017	1,398,969	3.81	2.06	—
Granted	1,035,000	1.50		
Increase due to trigger of anti-dilution provision feature	1,492,848	1.50		
Exercised	—	—		
Forfeited	—	—		
Expired	(145,841)	6.00		
Outstanding, as of December 31, 2018	3,780,976	1.59	2.05	—
Vested or expected to vest at December 31, 2018	3,780,976	1.59	2.05	—
Exercisable at December 31, 2018	3,780,976	1.59	2.05	—

NOTE O—STOCK OPTIONS

2004 *Stock Option Plan*

On October 12, 2004, the Board of Directors of the Company approved the 2004 Stock Option Plan (the 2004 Plan). The 2004 Plan was not presented to stockholders for approval and thus incentive stock options were not available under this plan. Under the terms of this plan, 166,667 shares of common stock were reserved for issuance to employees, officers, directors, and consultants of the Company at exercise prices which may not be below 85% of fair market value. The term of stock options granted may not exceed ten years. Options issued under the 2004 Plan vest pursuant to the terms of stock option agreements with the recipients. In the event of a change in control, as defined, all options outstanding vest immediately. The 2004 Plan expired in October 2014.

2015 *Stock Option Plan*

On January 27, 2016, the shareholders approved the 2015 Equity Incentive Plan (the 2015 Plan). Under the terms of this plan, 666,667 shares of common stock are reserved for issuance to employees, officers, directors, and consultants of the Company at exercise prices which may not be below 100-110% of fair market value. The term of stock options granted may not exceed ten years. Options issued under the 2015 Plan vest pursuant to the terms of stock option agreements with the recipients. In the event of a change in control, certain stock awards issued under this plan may be subject to additional acceleration of vesting as may be provided in the participants' written agreement. The 2015 Plan expires in December 2025.

Non-Plan Stock Options

Periodically, the Company has granted options outside of the 2004 and 2015 Plans to various employees and consultants. In the event of change in control, as defined, certain of the non-plan options outstanding vest immediately.

Stock Option Activity

Information summarizing option activity is as follows:

	Number of Options				Weighted average exercise price	Weighted average remaining life (in years)	Aggregate intrinsic value
	2004 Plan	**2015 Plan**	**Non Plan**	**Total**			
Outstanding, as of December 31, 2016	**69,380**	**25,003**	**247,280**	**341,663**	**$ 3.99**		
Granted	—	64,167	1,170,000	1,234,167	2.69		
Exercised	—	—	(4,167)	(4,167)	2.16		
Forfeited	—	(7,084)	(65,140)	(72,224)	2.62		
Expired	(17,084)	—	(4,862)	(21,946)	8.86		
Outstanding, as of December 31, 2017	**52,296**	**82,086**	**1,343,111**	**1,477,493**	**$ 2.91**	**5.64**	**$ 0**
Granted	—	351,918	—	351,918	1.97		
Exercised	—	—	—	—	—		
Forfeited	—	(38,613)	(111,253)	(149,866)	2.63		
Expired	(18,961)	(13,473)	(59,097)	(91,531)	3.03		
Outstanding, as of December 31, 2018	**33,335**	**381,918**	**1,172,761**	**1,588,014**	**$ 2.72**	**5.00**	**$ 0**
Vested or expected to vest at December 31, 2018				**1,321,981**	**$ 2.79**	**4.83**	**$ 0**
Exercisable at December 31, 2018				**593,573**	**$ 3.17**	**3.94**	**$ 0**

The options outstanding and exercisable at December 31, 2018 were in the following exercise price ranges:

Options Outstanding	Options Exercisable

Range of exercise prices	Number of shares	Weighted average exercise price	Weighted average remaining life (in years)	Number exercisable	Weighted average exercise price
$1.83-2.50	413,843	$ 2.01	5.88	81,230	$ 2.15
2.51-3.50	1,000,415	2.69	5.23	338,587	2.69
3.51-4.92	173,756	4.58	1.76	173,756	4.58
$1.83-4.92	1,588,014			593,573	

The aggregate intrinsic value in the table above represents the total intrinsic value, based on the Company's closing stock price of $0.75 as of December 31, 2018, which would have been received by the option holders had all option holders exercised their options as of that date. The total number of in-the-money options exercisable as of December 31, 2018 was 0.

The weighted average fair value of options granted during the years ended December 31, 2018 and 2017 was $1.53 and $2.32 per share, respectively. The total intrinsic value of options exercised during the years ended December 31, 2018 and 2017 was $0 and $5,667, respectively. The total fair value of shares vested during the years ended December 31, 2017 and 2016 was $946,435 and $197,281 respectively.

As of December 31, 2018, future forfeiture adjusted compensation cost related to nonvested stock options is $1,228,771 and will be recognized over an estimated weighted average period of 1.50 years.

NOTE P—INCOME TAXES

There was no provision for federal or state taxes as at December 31, 2018 and 2017.

In December 22, 2017, the U.S. government enacted comprehensive tax legislation commonly referred to as the Tax Cuts and Jobs Act (the "Tax Act"). The Tax Act significantly impacts the future ongoing U.S. corporate income tax by, among things, lowering the U.S. corporate income tax rates from 34% to 21%, providing for unlimited net operating loss carry-forward periods, and implementing a territorial tax system. The reduction of the U.S. corporate tax rate required the Company to revalue its U.S. deferred tax assets and liabilities and valuation allowances to the recently enacted federal rate of 21%. This transitional impact resulted in a provisional reduction of certain of the Company's US deferred tax assets which are offset by a full valuation allowance.

The Company has deferred taxes due to income tax credits, net operating loss carryforwards, and the effect of temporary differences between the carrying values of certain assets and liabilities for financial reporting and income tax purposes. Significant components of deferred taxes are as follows at December 31:

	2018	**2017**
Accrued compensation	$91,000	$118,000
Accounts receivable allowance	474,000	277,000
Stock-based compensation	644,000	387,000
Basis differences in fixed assets	(13,000)	(18,000)
Basis differences in intangible assets	50,000	46,000
Net operating loss and credit carryforwards	12,735,000	12,052,000
Valuation allowances	(13,981,000)	(12,862,000)
	$—	$—

The Company has a valuation allowance against the full amount of its net deferred taxes due to the uncertainty of realization of the deferred tax assets due to operating loss history of the Company. The Company currently provides a valuation allowance against deferred taxes when it is more likely than not that some portion, or all of its deferred tax assets will not be realized. The valuation allowance could be reduced or eliminated based on future earnings and future estimates of taxable income. Similarly, income tax benefits related to stock options exercised have not been recognized in the financial statements.

As of December 31, 2018, the Company has federal net operating loss carryforwards of approximately $60 million subject to expiration between 2021 and 2037. These net operating loss carryforwards are subject to the limitations under Section 382 of the Internal Revenue Code due to changes in the equity ownership of the Company.

A reconciliation of the effective income tax rate on operations reflected in the Statements of Operations to the US Federal statutory income tax rate is presented below.

	2018	**2017**
Federal statutory income tax rate	21 %	34 %
Permanent differences	—	—
Change in tax laws/tax rate	—	(13)
Effect of net operating loss	(21)	(21)
Effective tax rate	— %	— %

The Company has not been audited by the Internal Revenue Service (“IRS”) or any states in connection with income taxes. The Company files income tax returns in the U.S. federal jurisdiction and various state jurisdictions. The periods from 2015 through 2018 remain open to examination by the IRS and state jurisdictions. The Company believes it is not subject to any tax audit risk beyond those periods. The Company’s policy is to recognize interest and penalties accrued on any unrecognized tax benefits as a component of income tax expense. The Company does not have any accrued interest or penalties associated with any unrecognized tax benefits, nor was any significant interest expense recognized during the years ended December 31, 2018 and 2017.

NOTE Q—PROFIT SHARING PLAN

The Company has established a savings plan under section 401(k) of the Internal Revenue Code. All employees of the Company, after completing one day of service, are eligible to enroll in the 401(k) plan. Participating employees may elect to defer a portion of their salary on a pre-tax basis up to the limits as provided by the IRS Code. The Company is not required to match employee contributions but may do so at its discretion. The Company made no contributions during the years ended December 31, 2018 and 2017.

NOTE R—EARNINGS PER SHARE (EPS)

The Company's basic EPS is calculated using net income (loss) available to common shareholders and the weighted-average number of shares outstanding during the reporting period. Diluted EPS includes the effect from potential issuance of common stock, such as stock issuable pursuant to the exercise of stock options and warrants and the assumed conversion of preferred stock.

The reconciliation of the numerator of the basic and diluted EPS calculations, due to the inclusion of preferred stock dividends was as follows for the following fiscal years ended December 31:

	2018	**2017**
Basic Numerator:		
Loss from continuing operations	$(6,868,875)	$(4,275,338)
Deemed dividend from trigger of anti-dilution provision feature	(1,428,966)	-
Convertible preferred stock dividends	(198,033)	(769,158)
Net loss available to common stockholders (basic and diluted EPS)	$(8,495,874)	$(5,044,496)

The following table summarizes the weighted average securities that were excluded from the diluted per share calculation because the effect of including these potential shares was antidilutive.

Years ended December 31,

	2018	2017
Preferred stock	1,426,756	5,264,422
Stock options	83	15,529
Warrants	697,879	2,109
Potentially dilutive securities	2,124,718	5,282,060

Items excluded from the diluted per share calculation because the exercise price was greater than the average market price of the common shares:

	Years ended December 31,	
	2018	2017
Stock options	1,583,014	1,390,428
Warrants	186,806	1,351,052
Total	1,769,820	2,741,480

NOTE S—SUBSEQUENT EVENTS

On March 21, 2019, the Company issued 12,716 shares of common stock to its directors in payment of board and committee fees.

On March 21, 2019, the Company issued options to purchase 235,334 shares of the Company's common stock to certain officers, employees, and contractors. The options have a three year vesting period, seven year term, and exercise price of $1.18.

On March 28, 2019, the Company issued 1,104 shares of common stock to its directors in payment of committee fees.

The Company has reviewed subsequent events through the date of this filing.

EXHIBIT INDEX

Exhibit No.	Exhibit
3.1	Certificate of Incorporation of BIO-key International, Inc., a Delaware corporation (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on January 5, 2005)
3.2	Bylaws (incorporated by reference to Exhibit 3.3 to the current report on Form 8-K, filed with the SEC on January 5, 2005)
3.3	Certificate of Amendment to Certificate of Incorporation (incorporated by reference to Appendix A to the definitive proxy statement, filed with the SEC on January 18, 2006)
3.4	Certificate of Amendment of Certificate of Incorporation of Bio-key International, Inc., a Delaware corporation (incorporated by reference to Exhibit 3.4 to the annual report on Form 10-K, filed with the SEC on March 31, 2015)
3.5	Certificate of Elimination of BIO-key International, Inc. filed October 6, 2015 (incorporated by reference to Exhibit 3.5 to the registration statement on Form S-1 File No. 333-208747 filed with the SEC on December 23, 2015)
3.6	Certificate of Designation of Preferences, Rights and Limitations of Series A-1 Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on November 2, 2015)
3.7	Certificate of Designation of Preferences, Rights and Limitations of Series B-1 Convertible Preferred Stock (incorporated by reference to Exhibit 3.1 to the quarterly report on Form 10-Q, filed with the SEC on November 16, 2015)
3.8	Certificate of Amendment of Certificate of Incorporation of Bio-key International, Inc., a Delaware corporation (incorporated by reference to Exhibit 3.1 to the current report on Form 8-K, filed with the SEC on December 28, 2016)
4.1	Specimen Stock Certificate (incorporated by reference to Exhibit 4.1 to the registration statement on Form SB-2, File No. 333-16451)
10.1	Employment Agreement by and between BIO-key International, Inc. and Mira LaCous dated November 20, 2001 (incorporated by reference to Exhibit 10.39 to the current report on Form 8-K, filed with the SEC on January 22, 2002)
10.2	BIO-key International, Inc. 2004 Stock Incentive Plan (incorporated by reference to Exhibit 10.48 to amendment no. 1 the registrant's registration statement on Form SB-2, File No. 33-120104, filed with the SEC on December 14, 2004)

10.3	Employment Agreement, effective March 25, 2010, by and between the Company and Michael W. DePasquale (incorporated by reference to Exhibit 10.93 to the annual report on Form 10-K, filed with the SEC on March 26, 2010)
10.4	Form of Warrant (incorporated by reference to Exhibit 10.30 to the registration statement on Form S-1, filed with the SEC on July 26, 2013)
10.5	Employment Agreement by and between BIO-key International, Inc. and Cecilia Welch dated May 15, 2013 (incorporated by reference to Exhibit 10.42 to the annual report on Form 10-K, filed with the SEC on March 31, 2014)
10.6	Third Amendment to Lease Agreement by and between BIO-key International, Inc. and Victor AOP, Inc. dated June 30, 2013 (incorporated by reference to Exhibit 10.43 to the annual report on Form 10-K, filed with the SEC on March 31, 2014)
10.7	First Amendment to Lease Agreement by and between BIO-key International, Inc. and BRE/DP MN LLC dated September 12, 2013 (incorporated by reference to Exhibit 10.44 to the annual report on Form 10-K, filed with the SEC on March 31, 2014)
10.8	Form of Investor Warrant, by and between the Company and certain investors dated November 13, 2014 (incorporated by reference to Exhibit 10.2 to the quarterly report on Form 10-Q, filed with the SEC on November 14, 2014)
10.9	Form of Convertible Preferred Stock Purchase Agreement (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on November 2, 2015)

10.10	Form of Registration Rights Agreement (incorporated by reference to Exhibit 10.2 to the current report on Form 8-K, filed with the SEC on November 2, 2015)
10.11	Form of Securities Purchase Agreement (incorporated by reference to Exhibit 10.1 to the quarterly report on Form 10-Q, filed with the SEC on November 16, 2015)
10.12	Form of Registration Rights Agreement (incorporated by reference to Exhibit 10.2 to the quarterly report on Form 10-Q, filed with the SEC on November 16, 2015)
10.13	BIO-key International, Inc. 2015 Equity Incentive Plan (incorporated by reference to Appendix B to the definitive proxy statement filed with the SEC on December 15, 2015)
10.14	Software License Purchase Agreement Dated November 11, 2015 by and among BIO-key Hong Kong Limited, Shining Union Limited, WWTT Technology China, Golden Vast Macao Commercial Offshore Limited, Giant Leap International Limited (incorporated by reference to Exhibit 10.36 to the registration statement on Form S-1 File No. 333-208747 filed with the SEC on December 23, 2015)**
10.15	Securities Purchase Agreement dated November 11, 2016 by and between Registrant and Wong Kwok Fong (Kelvin) (incorporated by reference to Exhibit 10.1 to the quarterly report on Form 10-Q, filed with the SEC on November 14, 2016)
10.16	Securities Purchase Agreement dated April 28, 2017 by and between Registrant and Wong Kwok Fong (Kelvin) (incorporated by reference to Exhibit 10.1 to the quarterly report on Form 8-K, filed with the SEC on May 3, 2017)
10.17	Common Stock Purchase Agreement dated May 2, 2017 by and between Registrant and Xanthe Holdings Ltd. (incorporated by reference to Exhibit 10.2 to the quarterly report on Form 8-K, filed with the SEC on May 3, 2017)
10.18	Form of Registration Rights Agreement (incorporated by reference to Exhibit 10.3 to the current report on Form 8-K, filed with the SEC on May 3, 2017)
10.19	Form Non-Plan Option Agreement between the Company and certain of its directors, officers, employees and contractors (incorporated by reference to Exhibit 10.4 to the quarterly report on Form 10-Q filed with the SEC on May 15, 2017)
10.20	Securities Purchase Agreement dated April 3, 2018 by and between the Registrant and Wong Kwok Fong (Kelvin) (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on April 4, 2018
10.21	Securities Purchase Agreement dated May 23, 2018 by and between the Registrant and Giant Leap International Limited (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on May 30, 2018
10.22	Securities Purchase Agreement dated May 23, 2018 by and between the Registrant and Micron Technology Development Limited (incorporated by reference to Exhibit 10.2 to the current report on Form 8-K, filed with the SEC on May 30, 2018

10.23	Securities Purchase Agreement dated May 31, 2018 by and between the Registrant and Wong Kwok Fong (Kelvin) (incorporated by reference to Exhibit 10.1 to the current report on Form 8-K, filed with the SEC on June 4, 2018
10.24	Underwriting Agreement dated August 22, 2018 by and between the Registrant and Maxim Group LLP (incorporated by reference to Exhibit 1.1 to the current report on Form 8-K, filed with the SEC on August 27, 2018
10.25	Form of Common Stock Purchase Warrant dated August 24, 2018 (incorporated by reference to Exhibit 4.1 to the current report on Form 8-K, filed with the SEC on August 27, 2018
10.26	GLP 2nd Amendment to Lease dated July 27, 2018
10.27	Marlen 4th Amendment to Lease dated June 2, 2018
21.1	List of subsidiaries of BIO-key International, Inc. (incorporated by reference to Exhibit 21.1 to the annual report on Form 10-K, filed with the SEC on March 30, 2016)
23.1*	Consent of RMSBG
31.1*	Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
31.2*	Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002
32.1*	Certification of the Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
32.2*	Certification of the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002

101.INS* XBRL Instance

101.SCH* XBRL Taxonomy Extension Schema

101.CAL* XBRL Taxonomy Extension Calculation

101.DEF* XBRL Taxonomy Extension Definition

101.LAB* XBRL Taxonomy Extension Labels

101.PRE* XBRL Taxonomy Extension Presentation

* filed herewith

** Confidential treatment has been requested with respect to certain portions of this exhibit. Omitted sections have been filed separately with the Securities and Exchange Commission

SIGNATURES

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

BIO-KEY INTERNATIONAL, INC.

Date: April 1, 2019 By: /s/ MICHAEL W. DEPASQUALE
Michael W. DePasquale
CHIEF EXECUTIVE OFFICER

(Principal Executive Officer)

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

Signature	**Title**	**Date**
/s/ MICHAEL W. DEPASQUALE Michael W. DePasquale	Chairman of the Board of Directors, Chief Executive Officer and Director (Principal Executive Officer)	April 1, 2019
/s/ CECILIA WELCH Cecilia Welch	Chief Financial Officer (Principal Financial and Accounting Officer)	April 1, 2019
/s/ROBERT J. MICHEL Robert J. Michel	Director	April 1, 2019
/s/ THOMAS E. BUSH III Thomas E. Bush	Director	April 1, 2019
/s/ THOMAS GILLEY Thomas Gilley	Director	April 1, 2019
/s/ WONG KWOK FONG	Director	

Wong Kwok Fong		April 1, 2019
/s/ YAO JIANHUI Yao Jianhui	Director	April 1, 2019
/s/ FABIAN SHIN Fabian Shin	Director	April 1, 2019
/s/ PIETER KNOOK Pieter Knook	Director	April 1, 2019