

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549
FORM 10-K

(Mark One)

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

For the fiscal year ended December 31, 2017

or

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

For the transition period from _____ to _____

Commission File Number: 001-33852

VirnetX Holding Corporation

(Exact name of registrant as specified in its charter)

Delaware
 (State or other jurisdiction of incorporation or organization)

77-0390628

(I.R.S. Employer Identification Number)

308 Dorla Court, Suite 206
 Zephyr Cove, Nevada
 (Address of principal executive offices)

89448
 (Zip Code)

Registrant's telephone number, including area code: 775-548-1785
 Former name, former address and former fiscal year, if changed since last report: N/A
 Securities registered pursuant to Section 12(b) of the Act:

Title of Class	Name of Exchange on Which Registered
Common Stock, par value \$0.0001 per share	NYSE American LLC

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 o 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 o 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 o

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes No o

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. o

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. (Check one):

Large accelerated filer o Accelerated filer Smaller reporting company o
 Non-accelerated filer o (Do not check if a smaller reporting company) Emerging growth company o

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. o

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the Registrant as of June 30, 2017, was \$235,390,533 based upon the closing price of the common shares of the Registrant on June 30, 2017. This calculation does not reflect a determination that certain persons are affiliates of the Registrant for any other purpose.

60,821,163 shares of Registrant's Common Stock were outstanding as of March 14, 2018.

DOCUMENTS INCORPORATED BY REFERENCE

The information required by Part III of this Annual Report on Form 10-K, to the extent not set forth herein, is incorporated by reference from the Registrant's definitive proxy statement to be filed with the Securities and Exchange Commission not later than 120 days after December 31, 2017 relating to the Registrant's 2018 Annual Meeting of Stockholders.

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SPECIAL NOTE REGARDING FORWARD LOOKING STATEMENTS

We have included or incorporated by reference in this Annual Report on Form 10-K (including in the section entitled Management’s Discussion and Analysis of Financial Condition and Results of Operations), and from time to time we may make statements that may constitute “forward-looking statements” within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. These forward-looking statements are based upon our current expectations, estimates, assumptions and beliefs concerning future events and conditions and may discuss, among other things, anticipated future performance (including sales and earnings), expected growth, future business plans and costs and potential liability for environmental-related matters. Any statement that is not historical in nature is a forward-looking statement and may be identified by the use of words and phrases such as “anticipates,” “believes,” “estimates,” “expects,” “intends,” “plans,” “predicts,” “projects,” “will be,” “will continue,” “will likely result in,” and similar expressions. These statements include our beliefs and statements regarding general industry and market conditions and growth rates, as well as general domestic and international economic conditions. Readers are cautioned not to place undue reliance on forward-looking statements. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside our control, which could cause actual results to differ materially from such statements and from our historical results and experience. These risks, uncertainties and other factors include, but are not limited to those described in Item 1A - Risk Factors of this Annual Report on Form 10-K and elsewhere in the Annual Report and those described from time to time in our future reports filed with the Securities and Exchange Commission. Readers are cautioned that it is not possible to predict or identify all of the risks, uncertainties and other factors that may affect future results and that the risks described herein should not be considered to be a complete list. Any forward-looking statement speaks only as of the date on which such statement is made, and we undertake no obligation to update or revise any forward-looking statement, whether as a result of new information, future events or otherwise.

EXCEPT AS REQUIRED BY LAW, WE UNDERTAKE NO OBLIGATION TO UPDATE OR REVISE ANY FORWARD-LOOKING STATEMENT AS A RESULT OF NEW INFORMATION, FUTURE EVENTS OR OTHERWISE.

PART I

Item1. Business.

The Company

We are an Internet security software and technology company with patented technology for secure communications including 4G LTE security. Our software and technology solutions, including our Secure Domain Name Registry and GABRIEL Connection Technology™, are designed to facilitate secure communications and provide the security platform required by next-generation Internet-based applications such as instant messaging, or IM, voice over Internet protocol, or VoIP, mobile services, streaming video, file transfer, remote desktop and Machine-to-Machine, or M2M communications. Our technology generates secure connections on a “zero-click” or “single-click” basis, significantly simplifying the deployment of secure real-time communication solutions by eliminating the need for end-users to enter any encryption information. Our portfolio of intellectual property is the foundation of our business model. We currently own approximately 185 total patents and pending applications, including 70 US patents/patent applications and 115 foreign patents/validations/pending applications. Our patent portfolio is primarily focused on securing real-time communications over the Internet, as well as related services such as the establishment and maintenance of a secure domain name registry. Our patented methods also have additional applications in the key areas of device operating systems and network security for Cloud services, M2M communications in the new initiatives like “Smart City”, “Connected Car” and “Connected Home” that would connect everything from social services and citizen engagement to public safety, transportation and economic development to the internet to enable more productivity, features and efficiency in our everyday lives. The subject matter of all our U.S. and foreign patents and pending applications relates generally to securing communication over the internet, and as such covers all our technology and other products. Our issued U.S. and foreign patents expire at various times during the period from 2019 to 2024. Some of our issued patents and pending patent applications were acquired by our principal operating subsidiary; VirnetX, Inc., from Leidos, Inc., or Leidos, (f/k/a Science Applications International Corporation, or SAIC) in 2006 and we are required to make payments to Leidos, based on cash or certain other values generated from those patents. The amount of such payments depends upon the type of value generated, and certain categories are subject to maximums and other limitations.

Our product GABRIEL Secure Communication Platform™, unlike other collaboration and communication products and services on the market today, does not require access to user’s confidential data and reduces the threat of hacking and data mining. It enables individuals and organizations to maintain complete ownership and control over their personal and confidential data, secured within their own private network, while enabling authorized secure encrypted access from anywhere at any time. Our GABRIEL Collaboration Suite™ is a set of applications that run on top of our GABRIEL Secure Communication Platform™. It enables seamless and secure cross-platform communications between user’s devices that have our software installed. Our GABRIEL Collaboration Suite™ is available for download and free trial, for Android, iOS, Windows, Linux and Mac OS X platforms, at <http://www.gabrielsecure.com/>. We continue to enhance our products and add new functionality to our products. We will provide updates to new and existing customers as they are released to the general public. Over 80 small and medium businesses have installed our GABRIEL Secure Communication Platform™ and GABRIEL Collaboration Suite™ products in their corporate networks. We intend to continue to expand our customer base with targeted promotions and direct sales initiatives.

We are actively recruiting best-of-breed partners in various vertical markets including, healthcare, finance, government, etc, to help us rapidly expand our enterprise customer base. A number of International Association of Certified ISAO (IACI) including, ISAO's for Maritime & Ports, ISAO Credit Union ISAO, City of Chicago, ISAO Human Trafficking ISAO have chosen to deploy our software as private and secure e-technology to protect their communications. Several other ISAOs are completing their evaluations before deploying our products within their networks.

We have executed a number of patent and technology licenses and intend to seek further licensees for our technology, including our GABRIEL Connection Technology™ to original equipment manufacturers, or OEMs, of chips, servers, smart phones, tablets, e-Readers, laptops, net books and other devices, within the IP-telephony, mobility, fixed-mobile convergence and unified communications markets including 4G/LTE Advanced.

We have submitted a declaration with the 3rd Generation Partnership Project, or 3GPP, identifying a group of our patents and patent applications that we believe are or may become essential to certain developing specifications in the 3GPP LTE, Systems Architecture Evolution, or SAE project. We have agreed to make available a non-exclusive patent license under fair, reasonable and non-discriminatory terms and conditions, with compensation, or FRAND,

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to 3GPP members desiring to implement the technical specifications identified by us. We believe that we are positioned to license our essential security patents to 3GPP members as they move into deploying 4G/LTE Advanced devices and solutions.

We have an ongoing GABRIEL Licensing Program under which we offer licenses to a portion of our patent portfolio, technology and software, including our secure domain name registry service, to domain infrastructure providers, communication service providers as well as to system integrators. Our GABRIEL Connection Technology™ License is offered to OEM customers who want to adopt the GABRIEL Connection Technology™ as their solution for establishing secure connections using secure domain names within their products. We have developed GABRIEL Connection Technology™ Software Development Kit (SDK) to assist with rapid integration of these techniques into existing software implementations with minimal code changes and include object libraries, sample code, testing and quality assurance tools and the supporting documentation necessary for a customer to implement our technology. Customers who want to develop their own implementation of the VirnetX patented techniques for supporting secure domain names, or other techniques that are covered by our patent portfolio for establishing secure communication links, can purchase a patent license. The number of patents licensed, and therefore the cost of the patent license to the customer, will depend upon which of the patents are used in a particular product or service. These licenses will typically include an initial license fee, as well as an ongoing royalty.

We have signed Patent License Agreements with Avaya Inc., Aastra USA, Inc., Microsoft Corporation, Mitel Networks Corporation, NEC Corporation and NEC Corporation of America, Siemens Enterprise Communications GmbH & Co. KG, and Siemens Enterprise Communications Inc. to license certain of our patents, for a one-time payment and/or an ongoing royalty for all future sales through the expiration of the licensed patents with respect to certain current and future IP-encrypted products. We have engaged IPVALUE Management Inc. to assist us in commercializing our portfolio of patents on securing real-time communications over the Internet. Under the multi-year agreement, IPVALUE is expected to originate and assist us with negotiating transactions related to patent licensing worldwide with respect to certain third parties.

We believe that the market opportunity for our software and technology solutions is large and expanding as secure domain names are now an integral part of securing the next generation 4G/LTE Advanced wireless networks and M2M communications in areas including Smart City, Connected Car and Connected Home. We also believe that all 4G/LTE Advanced mobile devices will require unique secure domain names and become part of a secure domain name registry.

We intend to continue to license our patent portfolio, technology and software, including our secure domain name registry service, to domain infrastructure providers, communication service providers as well as to system integrators. We intend to seek further license of our technology, including our GABRIEL Connection Technology™ to enterprise customers, developers and original equipment manufacturers, or OEMs, of chips, servers, smart phones, tablets, e-Readers, laptops, net books and other devices, within the IP-telephony, mobility, fixed-mobile convergence and unified communications markets including 4G/LTE.

Our employees include the core development team behind our patent portfolio, technology and software. This team has worked together for over ten years and is the same team that invented and developed this technology while working at Leidos, Inc. (“Leidos”). Leidos is a FORTUNE 500® scientific, engineering and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure and health. The team has continued its research and development work started at Leidos, and expanded the set of patents we acquired in 2006 from Leidos, into a larger portfolio of approximately 185 U.S. and Foreign patents, patent validations and pending applications. This portfolio now serves as the foundation of our licensing business and planned service offerings and is expected to generate the majority of our future revenue in license fees and royalties. We intend to continue our research and development efforts to further strengthen and expand our patent portfolio.

Please see Item 7 – Management’s Discussion and Analysis of Financial Condition and Results of Operations – Operations – Research and Development Expenses for a description of our research and development expenses for the past three fiscal years.

We intend to continue using an outsourced and leveraged model to maintain efficiency and manage costs as we grow our licensing business by, for example, offering incentives to early licensing targets or asserting our rights for use of our patents. We also intend to expand our design pilot in participation with leading 4G/LTE companies (domain infrastructure providers, chipset manufacturers, service providers and others) and build our secure domain name registry.

Industry Overview

We believe that the rapid growth of mobile devices (smartphones/tablets/ultra-mobile PCs), with always-on network access, and need to socially interact with friends and family while maintaining a constant online presence has transformed the “Internet of Web 2.0” in to the “The Internet of the People”. It has become an evolving, rich and complex medium used by individuals and businesses to conduct commerce, share information and engage in real-time communications including email, text messaging, IM, and voice and video calls. We believe the user demand for high speed broadband access along with the quality of experience wherever they are and whatever BYOD (bring your own device) they may be using; Mobility, IP video delivery, and the move to cloud have dramatically changed the way service providers deliver services. While wireline networks remain the primary mechanism for delivering premium and high bandwidth services, its growth has held steady compared to the growth of the mobile communications. The cost barrier to obtaining a mobile device with data access has disappeared allowing billions of people to have online access on fixed and mobile networks, and those users accessing social networking websites, using peer-to-peer, or P2P applications, and uploading live content over the internet, which in turn is downloaded by millions, has led to significant growth in packet traffic. Not only is traffic growing and changing in nature, its location of origin and timing has become completely unpredictable. There is a significant impact on the mobile signaling network, brought on by smartphone penetration and consumer use of “chatty” applications that conduct frequent network queries.

We believe that as the users become more comfortable with using their smartphones/tablets and other connected devices, they will increasingly treat their mobile and fixed/WiFi networks as a single network and demand seamless transition from one network type to another without any disruption of service. The 4G/LTE standard was developed with the goal of creating a single IP network that is efficient, flexible, open up new business models and services revenues and eventually lead to true “virtual networks” or software-defined networks (SDN). The service providers were forced to perform complete overhaul of their telecom network infrastructure in order to move from TDM paradigm to next generation IP networks based on 4G/LTE for dealing with this rapidly growing demand. Before these network overhauls could be completed, some service providers decided to label their hybrid 3.5G/HSPA+/partial LTE implementations as 4G networks in order to mitigate the risk of losing revenue. We believe this has led to significant confusion and misunderstanding among users.

Adding to the demand for mobile and fixed broadband services is the fast adoption of connected machines or devices, or embedded systems capable of M2M communication. These M2M communications are made possible by a device (non-phone/tablet/pc such as a sensor) that is attached to a machine to capture an event that is relayed over a network via 3G/4G routers or fixed broadband lines, delivering data or events (such as temperature, location, consumption, heart rate, stress levels, light, movement, altitude and speed) to applications creating an “Internet of Things” or IoT. As the service providers start deploying true 4G (Long Term Evolution-Advanced, or LTE-Advanced) and this pace picks up, we believe that almost every device will get its own unique identity and a high-speed connection to the internet over a high-speed IP (Internet Protocol) based telecommunication network making it an “Internet of Everything”.

We believe that growing security concerns and vulnerabilities in a large number of use-case scenarios due to the inherent “open” nature of this architecture can throttle the successful adoption of these technologies. Security can no longer exist as a point solution, and enterprises are currently upgrading core IT infrastructure (systems, networks, and management) to integrate security into everything. Because of the complexity of today’s networks and the requirement to connect users from any location at any time on any device, enterprise buyers looking to improve security posture have to evaluate everything from software solutions for smartphones to routers and switches with integrated security, massive security appliances for data centers, cloud-based security services, and security solutions for virtualized environments and public and private clouds.

We believe that telecommunication markets are rapidly changing and presenting new challenges to the equipment and service providers, including but not limited to increasing user demand for mobile, always-on connections with multiple devices. We also believe that traffic growth, video acceleration, cloud services and a rapidly growing number of subscriber’s challenge currently available network architectures and that, because of this, service providers and carriers will eventually use a single network for fixed and mobile communications, private/premium communications and Internet access, in spite of the difficulties involved challenging their business models and forcing the consideration of new network architectures. We believe that LTE technology will deliver users the benefits of faster data speeds and new services by creating a new radio access technology that’s optimized for IP-based traffic and offers operators a simple upgrade path from 3G networks.

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Smartphones are multi-functional devices that handle a wide variety of business-critical applications and support increasingly complex functions including enhanced data processing, Internet access, e-mail access, calendars and scheduling, contact management and the ability to view electronic documents. Users have continual access to these applications while on the move making them an increasingly essential business tool for the mobile worker. These devices enable mobile workers to have similar functionality inside or outside the office thereby increasing employee efficiency. However, it is critical that this mobile environment have the same level of security as an enterprise's internal network.

Embedded mobile broadband computing devices include PCs, netbooks, tablets, and mobile Internet devices (MIDs) with embedded mobile broadband modems to enable Internet access via a mobile broadband network. A growing number of these devices are now shipping enabled with LTE/4G. Mobile Internet devices (MIDs) include handheld mobile Internet devices; e.g. eReader, gaming console, digital picture frame, digital camera, with embedded mobile broadband modems. Mobile broadband routers have mobile broadband modems or antenna as the broadband connection; have multiple Ethernet ports and integrated wireless access points for local area connectivity and bandwidth sharing; can have integrated hub or switch; may have an integrated stateful firewall or IPSec VPN and are also known as mobile hotspot routers.

Machine-to-Machine, or M2M, connected devices, or embedded systems; connected machines are fast becoming the eyes and ears of the enterprise. By adding sensors and networking technologies to the products they sell and the equipment they employ, companies are finding new ways to gather powerful insights and use new forms of data, thus creating a vast "internet of things". This communication is made possible by a device (such as an intelligent sensor) that is attached to a machine to capture an event, such as temperature, location, consumption, heart rate, stress levels, light, movement, altitude and speed, that is relayed over a network delivering data to applications. The potential applications for this technology are numerous and as such include smart meters in energy and utilities (the "smart grid"), connected vehicles in automotive and logistics, heart monitors in healthcare, RFID tagged inventory in retail and manufacturing, and digital signage in media and communications to name a few. Another fast-growing application is in the wearable technology products namely, fitness and wellness, infotainment (information-based media content), healthcare and medical, and industrial and military. The fitness and wellness segment comprises products like smart clothing and smart sensors, activity monitors, sleep sensors and others, whereas the Infotainment sector consists of products like smart watches, heads-up displays, smart glasses and others. The products like continuous glucose monitor, drug delivery, monitors, wearable patches and others have been covered under healthcare and medical segment and products like hand worn terminals, augmented reality headsets and others have been mentioned under industrial and military segment. We believe that the large revenue potential for M2M services that has attracted the attention of carriers globally risks being thwarted by the growing security concerns in M2M applications. Porous security is exposing vulnerabilities in a large number of use-case scenarios, including Automobiles, energy management systems, telemedicine, and telemetry. While built-in security is a high priority in all other information and communication technologies, it is yet to be considered, even at a basic level, in most M2M applications. The rapid and successful adoption of M2M in automobiles, healthcare, industrial installations, and consumer homes may be jeopardized if communication security is not designed in to all M2M devices and applications. All these new devices will require a unique identity addressable by a secure domain name and all their communications, with application servers and other devices, completely secured automatically and on-demand. IP mobility services require an environment where wired and wireless phones work together with Internet Protocol to deliver services (voice, video, data and combinations thereof) uniformly across multiple access networks, including, among others, LTE, WiMAX, WiFi cellular and fixed.

Voice over LTE ("VoLTE") technology is the foundation for communication services on any device over LTE, Wi-Fi and 5G. VoLTE is delivered via the IP Multimedia Subsystem (IMS) and enables operators to offer high-quality, simultaneous voice and LTE data services on smartphones and other devices. There are currently more than 1,000 VoLTE-enabled device models, supporting different regions and frequencies. Wi-Fi calling is built on the same core network systems as VoLTE, and enables operators to extend their voice service to places with limited cellular coverage. Over 50 Wi-Fi calling networks have been launched in more than 30 countries (Source: GSMA March 2017).

Based on our estimates, using several market data sources, we believe that Worldwide LTE based subscriptions are expected to grow from 2.7 billion in 2017 to 5.5 billion by 2023. VoLTE is now available in more than 125 networks spanning across approximately 60 countries. Based on recent measurements in operator networks, the number of VoLTE subscriptions is now projected to grow from 575 million to 4.6 billion by the end of 2022, making up more than 90 percent of all LTE subscriptions globally. Mobile Data Traffic per device, including smartphone, tablets, is

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expected to increase from 7.5 Gigabyte per month in 2017 to over 29 Gigabyte per month in 2023. We believe in order to realize the full functionality of IP mobility, several challenges including security must be overcome. When users are mobile, connections and data need to cross multiple network boundaries, each of which poses a security threat. Wireless networks may be threatened or compromised by rogue users who enter through insecure wireless access points. We believe that providing authenticated access to the M2M networks and enterprise applications are important requirements and represent a significant market opportunity for our patented technology and secure domain names to provide users or machines fully authenticated secure access on a “zero-click” or “single-click” basis.

Our Solutions

Our software and technology solutions, including our secure domain name registry, our patents and our GABRIEL Connection Technology™ are designed to secure real-time communications over the Internet. Our technology uses industry standard encryption methods with our patented Domain Name System, or DNS, lookup mechanisms to create a secure communication link between users intending to communicate in real time over the Internet. Our technology can be built into network infrastructure, operating systems or silicon chips developed for a communication or computing device to secure real-time communications over the Internet between numerous devices. Our technology automatically encrypts data allowing organizations and individuals to establish communities of secure, registered users and transmit information between multiple devices, networks and operating systems. These secure network communities, which we call secure private domains, or SPDs, are designed to be fully-customizable and support rich content applications such as IM, VoIP, mobile services, streaming video, file transfer and remote desktop in a completely secure environment. Our approach is a unique and patented solution that we believe provides the robust security platform required by these rich content applications and real-time communications over the Internet. We believe the key benefits and features of our technology include the following:

- **Automatic and seamless to the user.** After a one-time registration, users connect securely on a “zero-click” or “single-click” basis.
- **Secure data communications.** Users create secure networks with people they trust and communicate over a secure channel.
- **Control of data at all times.** Users can secure and customize their unified communication and collaboration applications such as file sharing and remote desktop with policy-based access and secure presence information.
- **Authenticated users.** Users know they are communicating with authenticated users with secure domain names.
- **Application-agnostic technology.** Our solution provides security at the IP layer of the network by using patented DNS lookup mechanisms to make connections between secure domain names, thereby obviating the need to provide application specific security.

Our Products

Our GABRIEL Secure Communication Platform™, unlike other collaboration and communication products and services on the market today, does not require access to users’ confidential data and reduces the threat of hacking and data mining. It enables individuals and organizations to maintain complete ownership and control over their personal and confidential data, secured within their own private network, while enabling authorized secure encrypted access from anywhere at any time. Our GABRIEL Collaboration Suite™ is a set of applications that run on top of our GABRIEL Secure Communication Platform™. It enables seamless and secure cross-platform communications between users’ devices. The following applications are included in the current release and can be easily accessed through the GABRIEL interface:

- Secure chat - allows users to quickly send and receive text, files and screen shots
- Secure share - allows users to grant coworkers read/write access to desired folders
- Secure video/voice - provides users ability to conduct audio and/or video conferencing securely with any other GABRIEL user
- Secure mail - allows users to send email and attachments directly from sender to recipient without requiring a centralized mail server

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- Secure sync/backup - allows users to quickly push single files or automatically backup your files to one or multiple GABRIEL destinations

Our GABRIEL Collaboration Suite™ is available for download and free trial, for Android, iOS, Windows, Linux and Mac OS X platforms, at <http://www.gabrielsecure.com/>. We continue to enhance our products and add new functionality to our products. We will provide updates to new and existing customers as they are released publicly. Over 80 small and medium businesses have installed our GABRIEL Secure Communication Platform™ and GABRIEL Collaboration Suite™ products in their corporate networks. We intend to continue to expand our customer base with targeted promotions and direct sales initiatives.

Competitive Strengths

We believe the following competitive strengths will enable our success in the marketplace:

- **Unique patented technology.** We are focused on developing innovative technology for securing real-time communications over the Internet and establishing the exclusive secure domain name registry in the United States and other key markets around the world. Our unique solutions combine industry standard encryption methods and communication protocols with our patented techniques for automated DNS lookup mechanisms. Our technology and patented approach enables users to create a secure communication link by generating secure domain names. We currently own approximately 185 total patents and pending applications, including 70 US patents/patent applications and 115 foreign patents/validations/pending applications. Our portfolio includes patents and pending patent applications in the United States and other key markets that support our secure domain name registry service for the Internet.
- **Scalable licensing business model.** We are actively engaged in pursuing additional licensing agreements with OEMs, service providers and system integrators within the IP-telephony, mobility, mobile-to-mobile communications, fixed-mobile convergence and unified communications end-markets.
- **Highly experienced research and development team.** Our research and development team is comprised of nationally recognized network security and encryption technology scientists and experts that have worked together as a team for over ten years. During their careers, this team has developed several cutting-edge technologies for U.S. national defense, intelligence and civilian agencies, many of which remain critical to our national security today. Prior to joining VirnetX, our team worked for Leidos, during which time they invented the technology that is the foundation of our technology, and software. Based on the collective knowledge and experience of our development team, we believe that we have one of the most experienced and sophisticated groups of security experts researching vulnerability and threats to real-time communication over the Internet and developing solutions to mitigate these problems.

Our Strategy

Our strategy is to become the market leader in securing real-time communications over the Internet and to establish our GABRIEL Communications Technology™ as the industry standard security platform. Key elements of our strategy are to:

- Actively recruit partners in various vertical markets, including healthcare, finance, government to help us rapidly expand our enterprise customer base.
- Promote our Gabriel Secure Communication Platform™ and Gabriel Collaboration Suite™ products in the general market for sale to end-user enterprises, directly and with partners, with targeted promotions and other marketing programs.
- Continue to grow our technology licensing program to commercialize our intellectual property, including our GABRIEL Connection Technology™ by adding more licensees in partnership with IPValue.
- Establish VirnetX as the exclusive universal registry of secure domain names and to enable our customers to act as registrars for their users and broker secure communication between users on different registries.

We have submitted a declaration with the 3rd Generation Partnership Project, or 3GPP, identifying a group of our patents and patent applications that we believe are or may become essential to certain developing specifications in the 3GPP LTE, SAE project. We have agreed to make available a non-exclusive patent license under fair, reasonable and non-discriminatory terms and conditions, with compensation, or FRAND, to 3GPP members desiring to implement the

technical specifications identified by us. We have also submitted a number of updates to our original declaration, identifying additional technical specifications that would also require a license to our US and Foreign patents.

License and Service Offerings

We offer a diversified portfolio of license and service offerings focused on securing real-time communications over the Internet, including:

- **VirnetX technology licensing:** Customers who want to develop their own implementation of the VirnetX code module for supporting secure domain names, or who want to use their own techniques that are covered by our patent portfolio for establishing secure communication links, could purchase a technology license. We anticipate that these licenses will typically include an initial license fee, as well as an ongoing royalty. We expect that these licenses will include a one-time delivery of GABRIEL software development kit including object libraries, sample code, testing and quality assurance tools and the supporting documentation necessary for a customer to implement of the techniques we have developed.
- **GABRIEL Connection Technology™ Software Development Kit or SDK:** OEM customers who want to adopt the GABRIEL Connection Technology™ as their solution for establishing secure connections using secure domain names within their products could purchase an SDK license. The software development kit consists of object libraries, sample code, testing and quality assurance tools and the supporting documentation necessary for a customer to implement our technology. These tools are comprised of software for a secure domain name connection test server, a relay test server and a registration test server. We expect that customers would pay an up-front license fee to purchase an SDK license and a royalty fee for every product shipped with the embedded VirnetX code module.
- **Secure domain name registrar service:** Customers, including service providers, telecommunication companies, ISPs, system integrators and OEMs could purchase a license to our secure domain name registrar service. We would provide the software suite and technology support to enable such customers to provision devices with secure domain names and facilitate secure connections between registered devices. This suite includes the following server software modules:
- **Registrar server software:** We anticipate that our registrar server software would enable customers to operate as a secure domain name registrar that provisions devices with secure domain names. The registrar server software is designed to provide an interface for our customers to register new virtual private domains and sub-domain names. This server module must be enrolled with the VirnetX secure domain name master registry to obtain its credentials before functioning as an authorized registrar.
- **Connection server software:** We anticipate that our connection server software would allow customers to provide connection services to enrolled devices. The connection services include registration of presence information for authenticated users and devices, presence information query request services, enforcement of policies and support for communication with peers behind firewalls.
- **Relay server software:** We anticipate that our relay server software would allow customers to dynamically maintain connections and relay data to private IP addresses for network devices that reside behind firewalls. Secure domain name registrar service customers will enter into a technology licensing and revenue sharing agreement with VirnetX whereby we will typically receive an up-front licensing fee for the secure domain name registrar technology, as well as ongoing annual royalties for each secure domain name issued by the customer.
- **Secure domain name master registry and connection service:** As part of enabling the secure domain name registrar service, we expect that we will maintain and manage the secure domain name master registry. This service is expected to enroll all secure domain name registrar customers and generate the credentials required to function as an authorized registrar. It also is expected to provide connection services and universal name resolution, presence information and secure connections between authorized devices with secure domain names.
- **Technical support services:** We intend to provide high-quality technical support services to licensees and customers for the rapid customization and deployment of GABRIEL Connection Technology™ in an individual customer's products and services.

Our research and development team is the team responsible for inventing the claimed subject matter of the patents that form the foundation of our technology. This team has worked together for over ten years. We intend to leverage

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this experience and continue investing in research and development and, over time, expect to strengthen and expand our patent portfolio, technology, and software. While we are currently focused on securing real-time communications over the Internet and establishing the first and only secure domain name registry, we believe our existing and future intellectual property portfolio will extend to additional areas including, among others, network security and operating systems for fixed and mobile devices.

Customers

Our GABRIEL Collaboration Suite™ is available for download and free trial, for Android, iOS, Windows, Linux and Mac OS X platforms, at <http://www.gabrielsecure.com/>. We continue to enhance our products and add new functionality to our products. We will provide updates to new and existing customers as they are released publicly. Over 80 small and medium businesses have installed our GABRIEL Secure Communication Platform™ and GABRIEL Collaboration Suite™ products in their corporate networks. We continue to rapidly expand our customer base with targeted promotions and direct sales initiatives.

We have signed Patent License Agreements with Aastra USA, Inc. Avaya, Inc., Microsoft Corporation, Mitel Networks Corporation, NEC Corporation and NEC Corporation of America, Siemens Enterprise Communications GmbH & Co. KG, and Siemens Enterprise Communications Inc. to license certain of our patents, for a one-time payment and an ongoing royalty for all future sales through the expiration of the licensed patents with respect to certain current and future IP-encrypted products.

We are seeking further licensing of our technology, including our GABRIEL Connection Technology™ to developers and original equipment manufacturers, or OEMs, of chips, servers, smart phones, tablets, e-Readers, laptops, net books and other devices, within the IP-telephony, mobility, fixed-mobile convergence and unified communications markets including 4G/LTE. We have published our royalty rates and guidelines on our website. All forward moving licenses have adhered to these guidelines and have met or exceeded these rates and we will use these rates and guidelines in all future license negotiations.

Marketing and Sales

We plan to employ a leveraged, partner-oriented, marketing strategy for our technology licenses and software product offerings. In 2017, we successfully signed a number of Resellers & Managed Service Provider in various market segments, including, healthcare, finance, government, etc, to assist us in selling our software products to their customers. Some of our key partners include:

- ASCARD MSP (Healthcare)
- Above PAR Advisors (Financial)
- Max Cybersecurity (Government)

In 2018, we plan to continue working on a number of sales and marketing promotions, in the US and Japan, to recruit more resellers and partners along with direct sales programs as we seek to extend out our customer base internationally.

We plan to directly market our Gabriel Secure Communication Platform™ and Gabriel Collaboration Suite™ products, domain name registry services to our service provider and system integrator customers. We market our Gabriel line of products directly to small and medium businesses using online marketing programs and tools. A number of International Association of Certified ISAO (IACI) including, ISAO's for Maritime & Ports, ISAO Credit Union ISAO, City of Chicago, ISAO Human Trafficking ISAO have chosen to deploy our software as private and secure e-technology to protect their communications. Several other ISAOs are completing their evaluations before deploying our products within their networks.

We expect to leverage our relationship with Leidos, to extend our offering to departments and agencies within the federal government. Leidos is a FORTUNE 500® scientific, engineering and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure, and health. We intend to leverage our sales team for managing current accounts and pursuing sales opportunities with new customers.

In 2017, we began to pursue opportunities to market our GABRIEL™ Collaboration Suite and other products in Japan. In 2017, we entered into an Amended and Restated Revenue Sharing Agreement (the "Revenue Sharing Agreement") and

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an Amended and Restated Gabriel License Agreement (the “Gabriel License Agreement,” together with the Revenue Sharing Agreement, the “PITA Agreements”) with Public Intelligence Technology Associates (“PITA”) as well as a related engagement letter with Withlin, a Dentons Innovation Group Partnership, to facilitate our marketing efforts in Japan. However, since the execution of these agreements, these arrangements have not produced any meaningful results. The engagement letter terminated automatically on July 28, 2017. On March 16, 2018, we delivered a letter to PITA acknowledging the termination of the PITA Agreements but also notifying PITA that, though we consider the PITA Agreements effectively terminated, the letter also constituted a notice of termination pursuant to the relevant termination provisions of each PITA Agreement. More recently, we have begun to explore alternative strategies to pursue opportunities to work with other third parties in Japan, and elsewhere, using an approach that will seek to capitalize on these opportunities in part by placing more emphasis on the use of our own employees.

Competition

We believe our technology and solutions will compete primarily against various proprietary security solutions. We group these solutions into three main categories:

- Proprietary or home-grown application specific security solutions have been developed by vendors and integrated directly into their products for our target markets including IP-telephony, mobility, fixed-mobile convergence, and unified communications. These proprietary solutions have been developed due to the lack of standardized approaches to securing real-time communications. This approach has led to corporate networks that are isolated and, as a result, restrict enterprises to using these next-generation networks within the boundaries of their private network. These solutions generally do not provide security for communications over the Internet or require network administrators to manually exchange keys and other security parameters with each destination network outside their corporate network boundary. The cost-savings and other benefits of IP-based real-time communications are significantly limited by this approach to securing real-time communications.
- A session border controller, or SBC, is a device used in networks to exert control over the signaling and media streams involved in establishing, conducting and terminating VoIP calls. A traditional firewall or network address translation, or NAT, device typically block information like endpoint IP addresses and port numbers required by signaling protocols, such as SIP and XMPP, to reach and communicate with their intended destination. SBCs are used in physical networks to address these limitations and enable real-time session traffic to cross the boundaries created by firewalls and other NAT devices and enable VoIP calls to be established successfully. However, SBCs must decrypt and analyze every single data packet for the information to be transmitted successfully, thereby preventing end-to-end encryption. This network design results in SBCs becoming a single point of congestion on the network, as well as a single point of failure. SBCs are also limited to the physical network they secure.
- SIP firewalls, or SIP-aware firewalls, and application layer gateways, manage and protect the traffic, flow and quality of VoIP and other SIP-related communications. They perform real-time network address translation, dynamic firewall functions; support multiple signaling protocols, and media functionality, allowing secure interconnection and the flow of IP media streams across multiple networks. While SIP firewalls assist in analyzing SIP traffic transmitted over the corporate network to filter out various threats, they do not necessarily encrypt the traffic. As a result, this traffic is not entirely secure from end-to-end nor is it protected against threats like man-in-middle and eavesdropping.

Intellectual Property and Patent Rights

Our intellectual property is primarily comprised of trade secrets, patented know-how, issued and pending patents, copyrights and technological innovation.

We currently own approximately 185 total patents and pending applications, including 70 US patents/patent applications and 115 foreign patents/validations/pending applications. Our portfolio includes a number of patents that describe unique systems and methods for securing real-time communications over the Internet, as well as related services such as the establishment and maintenance of a secure domain name registry. Our software and technology solutions also may have additional applications relating to operating systems and network security. A complete list of our US patents is available on our website located at www.virnetx.com. Each patent is publicly accessible on the Internet website of the U.S. Patent and Trademark Office at www.uspto.gov. The term of each of our issued U.S. and foreign patents will expire during the period from 2019 to 2024.

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Notwithstanding anything to the contrary set forth in any of our filings under the Securities Act of 1933 or the Securities Exchange Act of 1934 that might incorporate future filings, the information set forth on the United States Patent and Trademark Office, or the USPTO Website, shall not be deemed to be a part of or incorporated by reference into any such filings. The Company does not warrant the accuracy, or completeness or adequacy of the USPTO Website, and expressly disclaims liability for errors or omissions on such website.

Assignment of Patents

Some of our issued patents and pending patent applications were acquired by our principal operating subsidiary, VirnetX, Inc., from Leidos, pursuant to an Assignment Agreement dated December 21, 2006, and a Patent License and Assignment Agreement dated August 12, 2005, as amended on November 2, 2006, including documents prepared pursuant to the November amendment, and as further amended on March 12, 2008. We recorded the assignment from Leidos, with the U.S. Patent Office on December 21, 2006.

Key terms of these agreements are as follows:

Patent Assignment. Leidos, unconditionally and irrevocably conveyed, transferred, assigned and quitclaimed all its right, title and interest in and to the patents and patent applications, as specifically set forth on Exhibit A to the assignment document recorded with the U.S. Patent Office, including, without limitation, the right to sue for past infringement.

License to Leidos, Outside the Field of Use. Effective March 12, 2008, we granted to Leidos, a non-exclusive, royalty free, fully paid, perpetual, worldwide, irrevocable, sub licensable and transferable right and license permitting Leidos, and its assignees to make, have made, import, use, offer for sale, and sell products and services covered by, and to make improvements to, the patents and patent applications we acquired from Leidos, solely outside our field of use.

Compensation Obligations. As consideration for the assignment of the patents and for the rights we obtained from Leidos, as amended, we are required to make payments to Leidos, based on cash or certain other values generated from those patents. The amount of such payments depends upon the type of value generated, and certain categories are subject to maximums and other limitations. As of June 30, 2010, we met our maximum royalty payment requirement; however, Leidos, is also entitled under certain circumstances to receive a portion of the proceeds paid to us for certain acquisitions of VirnetX and the settlement of certain patent infringement claims of ours.

Government Regulation

The laws governing online secure communications remain largely unsettled, even in areas where there has been legislative action. It may take years to determine whether and how existing laws governing intellectual property, privacy and libel apply to online communications and media. Such legislation may interfere with the growth in use of online secure communications and decrease the acceptance of online secure communications as a viable solution, which could adversely affect our business.

Due to the Internet's popularity and increasing use, new laws regulating secure communications may be adopted. These laws and regulations may cover, among other things, issues relating to privacy, pricing, taxation, telecommunications over the Internet, content, copyrights, distribution and quality of products and services. We intend to comply with all new laws and regulations as they are adopted.

The U.S. government has controlled the authoritative domain name system, or DNS, root server since the inception of the Internet. On July 1, 1997, the President of the United States directed the U.S. Secretary of Commerce to privatize the management of the domain name system in a manner that increases competition and facilitates international participation in its management.

On September 29, 2006, the U.S. Department of Commerce extended its delegation of authority by entering into a new agreement with the Internet Corporation for Assigned Names and Numbers, or ICANN, a California non-profit corporation headquartered in Marina Del Rey, California. ICANN is responsible for managing the accreditation of registry providers and registrars that manage the assignment of top level domain names associated with the authoritative DNS root directory. Although it is possible to create and manage other DNS root directories privately without accreditation from ICANN, the possibility of conflicting name and number assignments makes it less likely that users would widely adopt a top-level domain name associated with an alternative DNS root directory provided by a non-ICANN-accredited registry service.

Employees

As of December 31, 2017, we had 21 full and part-time employees.

Corporate Overview and History

We are a holding company and conduct our operations through our wholly-owned subsidiary, VirnetX, Inc. VirnetX, Inc., was incorporated in the State of Delaware in August 2005. In November 2006, VirnetX, Inc. acquired certain patents from SAIC, now Leidos. In July 2007, we effected a merger by and among VirnetX, Inc., VirnetX Holding Corporation and a wholly-owned subsidiary of VirnetX Holding Corporation, whereby VirnetX, Inc. merged with, and became, a wholly-owned subsidiary of VirnetX Holding Corporation and VirnetX Holding Corporation issued shares of its common stock to the stockholders of VirnetX, Inc. as consideration for the merger. As a result of this merger, the former security holders of VirnetX, Inc. came to own a majority of our outstanding common stock. On October 29, 2007, we changed our name from PASW, Inc. to VirnetX Holding Corporation.

Available Information

We file or furnish various reports, such as registration statements, periodic and current reports, proxy statements and other materials with the SEC. Our Internet website address is www.virnetx.com. You may obtain, free of charge on our Internet website, copies of our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, as soon as reasonably practicable after we electronically file such material with, or furnish it to, the SEC. The information we post is intended for reference purposes only; none of the information posted on our website is part of this report or incorporated by reference herein.

In addition to the materials that are posted on our website, you may read and copy any materials we file with the SEC at the SEC's Public Reference Room at 100 F Street, NE, Washington, DC 20549. You may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC also maintains an Internet site that contains reports, proxy and other information statements, and other information regarding issuers, including us, that file electronically with the SEC. The Internet address of the SEC's Internet site is <http://www.sec.gov>.

Item 1A. Risk Factors

Our operations and financial results are subject to various risks and uncertainties, including those described below, which could adversely affect our business, financial condition, results of operations, cash flows, and the trading price of our common and capital stock. You should carefully consider the risks and uncertainties described below in addition to the other information set forth in this Annual Form on Form 10-K, including the section titled "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and related notes, before making any investment in our common stock. The risks and uncertainties described below are not the only ones we face. Additional risks and uncertainties not presently known to us or that we currently believe to be immaterial may also adversely affect our business. If any of these risk factors occur, you could lose substantial value or your entire investment in our shares.

Risks Related to Our Business and Our Financial Reporting

We are involved and will continue to be involved in litigation defending our patent portfolio, which can be time-consuming and costly and we cannot anticipate the results.

We spend a significant amount of our financial and management resources to pursue our current litigation. We believe that this litigation and others that we may pursue in the future could continue for years and consume significant financial and management resources. The counterpart to our litigation includes large, well-financed companies with substantially greater resources than us. Patent litigation is risky and the outcome is uncertain, and we cannot assure you that any of our current or future litigation matters will result in a favorable outcome for us. In addition, even if we obtain favorable interim rulings or verdicts, they may be inconsistent with the ultimate resolution of the dispute. Also, we cannot assure you that we will not be exposed to claims or sanctions against us which may be costly or impossible for us to defend. Unfavorable or adverse outcomes may result in losses, exhaustion of financial resources or other adverse effects, which could encumber our ability to develop and commercialize our products.

We may need to raise additional capital to support our business growth, and this capital will be dilutive, may cause our stock price to drop or may not be available on acceptable terms, if at all.

We may need to raise additional capital, which may not be available to us when needed or may not be available on terms acceptable to us, to support our business growth or to respond to business opportunities, challenges or unforeseen circumstances, including sales under our ATM or our universal shelf registration statement. Our ability to obtain additional capital, if and when required, will depend on our business plans, investor demand, our operating performance, the condition of the capital markets, the terms of our current contractual obligations and other factors. If we raise additional funds through the issuance of equity, equity-linked or debt securities, including those under our ATM or our Universal Shelf Registration Statement, those securities may have rights, preferences, or privileges senior to the rights of our common stock, and our existing stockholders may experience dilution. Additionally, we are unable to predict the future success of our current ATM offering. Sales of a substantial number of shares of our common stock in the public market, the perception that these sales or other financings might occur, could depress the market price of our common stock and could also impair our ability to raise capital through the sale of additional equity securities. If we issue debt securities or incur indebtedness, the incurrence of indebtedness would result in increased fixed payment obligations and could also result in restrictive covenants, such as limitations on our ability to incur additional debt, limitations on our ability to acquire, sell or license intellectual property rights and other operating restrictions that could adversely impact our ability to conduct our business. If we are unable to obtain additional capital, or are unable to obtain additional capital on satisfactory terms, our ability to continue to support our business growth or to respond to business opportunities, challenges, or other circumstances could be adversely affected, and our business may be harmed.

We have terminated our revenue sharing and licensing arrangement with PITA and we cannot be sure any of our potential alternative strategies in Japan, or elsewhere, will be successful.

The PITA Agreements terminated in March 2018 as described elsewhere in this Annual Report on Form 10-K. PITA may dispute the effectiveness of that termination and litigation, which may be expensive and distracting to management, may ensue. Although we intend to pursue alternative strategies in our expansion efforts in Japan and other countries, including potential partnerships, joint ventures and other arrangements with third parties, we cannot be sure these efforts will be successful or be favorable to us.

We may not be able to capitalize on market opportunities related to our licensing strategy or our patent portfolio.

Our business strategy includes licensing our patents and technology to other companies in order to reach a larger end-user base than we could reach through direct sales and marketing efforts; as such, our business strategy and revenues will depend on intellectual property licensing fees and royalties for the majority of our revenues. We currently derive minimal revenue from licensing activities and we cannot assure you that we will successfully capitalize on our market opportunities or that our current business strategy will succeed. Factors that may affect our ability to execute our current business strategy include, but are not limited to, the following:

- although to date we have entered into a limited number of settlement and license agreements, we may not be successful in entering into further licensing relationships, or if we are successful in entering into such relationships, the acquisition of them may be expensive, and they, as well as our existing settlement and our existing and pending license agreements may not generate the financial results we expect;
- third parties may challenge the validity of our patents;
- the pendency of our various litigations may cause potential licensees not to do business with us;
- we face, and we expect to continue to face, intense competition from new and established competitors who may have superior products and services or better marketing, financial or other capacities than we do; and
- it is possible that one or more of our potential customers or licensees develops or otherwise sources products or technologies similar to, competitive with or superior to ours.

If we are not able to adequately protect our patent rights, our business would be negatively impacted.

We believe our patents are valid, enforceable and valuable. Notwithstanding this belief, third parties may make claims of infringement or invalidity claims with respect to our patents and such claims could give rise to material cost for defense or settlement or both, jeopardize or substantially delay a successful outcome of litigation we are or may

become involved in, divert resources away from our other activities, limit or cease our revenues related to such patents, or otherwise materially and adversely affect our business. Similar challenges could also prevent us from obtaining additional patents in the future. Additionally, several of our patents are currently, and other patents may in the future be, subject to United States Patent and Trademark Office (“USPTO”) post-grant inter partes review proceedings (“IPR”) which may result in all or part of these patents being invalidated or the claims of our patents being limited. Unfavorable or adverse outcomes in our litigation or IPRs may result in losses, exhaustion of financial resources, reduction in our ability to enforce our intellectual property rights, or other adverse effects, which could encumber our ability to develop and commercialize our products. Even if we are successful in enforcing our intellectual property rights, our patents may not ultimately provide us with any competitive advantages and may be less valuable than we currently expect. These risks may be heightened in countries other than the United States where laws regarding patent protection are less developed, and may be negatively affected by the fact that legal standards in the United States and elsewhere for protection of intellectual property rights in Internet-related businesses are uncertain and still evolving. In addition, there are a significant number of United States and foreign patents and patent applications in our areas of interest, and we expect that significant litigation in these areas will continue, and will add uncertainty to the value of certain patents and other intellectual property rights in our areas of interest. If we are unable to protect our intellectual property rights or otherwise realize value from them, our business would be negatively affected.

We can provide no assurances that the licensing of our essential security patents under FRAND will be successful.

At the request of the European Telecommunications Standards Institute (“ETSI”), and the Alliance for Telecommunications Industry Solutions (“ATIS”), we agreed to update our licensing declaration to ETSI and ATIS under their respective Intellectual Property Rights policies. This was in response to our Statement of Patent Holder identifying a group of our patents and patent applications that we believe are or may become essential to certain developing specifications in the 3rd Generation Partnership Project (3GPP) Long Term Evolution (“LTE”), Systems Architecture Evolution (“SAE”) project. We will make available a non-exclusive patent license under FRAND (fair, reasonable and non-discriminatory terms and conditions, with compensation) for the patents identified by us that are or become essential, to applicants desiring to implement the Technical Specifications identified by us, as set forth in the updated licensing declaration under the ATIS and ETSI Intellectual Property Rights policies. Our licensing declarations under the ATIS and ETSI Intellectual Property Rights policies may limit our flexibility in determining royalties and license terms for certain of our patents. Consequently, we cannot assure you that the licensing of the essential security patents will be successful or that third parties will be willing to enter into licenses with us on reasonable terms or at all, which could have an adverse effect on our business and harm our competitive position.

Because our business is conducted or expected to be conducted in an environment that is subject to rapid change, we may be subject to various developments in regulation, law and consumer preferences to which we may not be able to adapt successfully.

The current regulatory environment for our products and services remains unclear. We can give no assurance that our planned product offerings will be in compliance with laws and regulations of local, state, United States federal or foreign authorities. Further, we can give no assurance that we will not unintentionally violate such laws or regulations or that such laws or regulations will not be modified, or that new laws or regulations will be enacted in the future which would cause us to be in violation of such laws or regulations. For example, Voice-Over-Internet Protocol (“VoIP”) services are not currently subject to all the same regulations that apply to traditional telephony, but it is possible that similar regulations may be applied to VoIP in the future and that these could result in substantial costs to us which could adversely affect the marketability of our products and planned products related to VoIP. For further example, the use of the Internet and private Internet Protocol (“IP”) networks for communication is largely unregulated within the United States, but may become regulated in the future; Additionally, several foreign governments have enacted measures that could restrict or prohibit voice communications services over the Internet or private IP networks.

Our business depends on the growth of instant messaging, VoIP, mobile services, streaming video, file transfer and remote desktop and other next-generation Internet-based applications. A decline in the use of these applications due to complexity or cost of these applications relative to alternate traditional or newly developed communications channels, or development of alternative technologies, could cause a material decline in the number of users in these areas.

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More aggressive domestic or international regulation of the Internet in general, and Internet telephony providers and services specifically may materially and adversely affect our business, financial condition, operating results and future prospects.

Our exposure to outside influences beyond our control, including new legislation, court rulings or actions by the United States Patent and Trademark Office, could adversely affect our licensing and enforcement activities and results of operations.

Our licensing and enforcement activities are subject to numerous risks from outside influences, including the following:

- new legislation, regulations or rules related to obtaining patents or enforcing patents could significantly increase our operating costs and decrease our revenue. For instance, the United States Supreme Court has recently modified some tests used by the USPTO in granting patents during the past 20 years which may decrease the likelihood that we will be able to obtain patents and increase the likelihood of challenge of any patents we obtain or license. In addition, the United States recently enacted sweeping changes to the United States patent system under the Leahy-Smith America Invents Act, including changes that transition the United States from a “first-to-invent” system to a “first to file” system and alter the processes for challenging issued patents.
- more patent applications are filed each year resulting in longer delays in getting patents issued by the USPTO.
- federal courts are becoming more crowded, and as a result, patent enforcement litigation is taking longer.
- as patent enforcement becomes more prevalent, it may become more difficult for us to voluntarily license our patents.

New legislation, regulations or court rulings related to enforcing patents could harm our business and operating results.

Intellectual property is the subject of intense scrutiny by the courts, legislatures and executive branches of governments around the world. Various patent offices, governments or intergovernmental bodies may implement new legislation, regulations or rulings that impact the patent enforcement process or the rights of patent holders and such changes could negatively affect licensing efforts and/or litigations. For example, limitations on the ability to bring patent enforcement claims, limitations on potential liability for patent infringement, lower evidentiary standards for invalidating patents, increases in the cost to resolve patent disputes and other similar developments could negatively affect our ability to assert our patent or other intellectual property rights.

It is impossible to determine the extent of the impact of any new laws, regulations or initiatives that may be proposed, or whether any of the proposals will become enacted as laws. Compliance with any new or existing laws or regulations could be difficult and expensive, affect the manner in which we conduct our business and negatively impact our business, prospects, financial condition and results of operations.

If we experience security breaches, we could be exposed to liability and our reputation and business could suffer.

We expect to retain certain confidential and proprietary customer information in our secure data centers and secure domain name registry, as well as personal data and other confidential and proprietary information relating to our business. It will be critical to our business strategy that our facilities and infrastructure remain secure and are perceived by the marketplace to be secure. Our secure domain name registry operations will also depend on our ability to maintain our computer and telecommunications equipment in effective working order and to reasonably protect our systems against interruption, and potentially depend on protection by other registrars in the shared registration system. The secure domain name servers that we will operate will be critical hardware to our registry services operations. Therefore, we expect to have to expend significant time and money to maintain or increase the security of our products, facilities and infrastructure. Security technologies are constantly being tested by computer professionals, academics and “hackers.” Advances in computer capabilities and the techniques for attacking security solutions, new discoveries in the field of cryptography or other events or developments could result in compromises or breaches of our security measures and could make some or all our products obsolete or unmarketable. Likewise, if any of our products are found to have significant security vulnerabilities, then we may need to dedicate engineering and other resources to eliminate the vulnerabilities and to repair or replace products already sold or licensed to our

customers. Despite the security measures that we and our service providers utilize, our infrastructure and that of our service providers may be vulnerable to physical break-ins, computer viruses, attacks by hackers, phishing attacks, social engineering, or similar disruptive problems. It is possible that we may have to expend additional financial and other resources to address such problems. As a provider of Internet security software and technology, we may be the target of dedicated efforts by hackers and other third parties to overcome or defeat our security measures. Any physical or electronic break-in or other security breach or compromise of the information stored at our secure data centers and domain name registration systems, including any compromise due to human error or employee or contractor malfeasance, may jeopardize the security of information stored on our premises or in the computer systems and networks of our customers. In such an event, we could face significant liability and current or potential customers could be reluctant to use our services. Additionally, any such data security incident, or the perception that one has occurred could also result in adverse publicity and therefore adversely affect the market's perception of the security of electronic commerce and communications over IP networks as well as the security or reliability of our services.

A security breach or other security incident could require a substantial level of financial resources to rectify and could result in a claim and investigation that cause us to incur substantial fines, penalties, or other liability and related legal and other costs. Any actual or perceived security breach or other security incident may also harm our reputation and make it more difficult or impossible for us to successfully market to others. Any of the foregoing matters could harm our operating results and financial condition.

Privacy and data security concerns, and data collection and transfer restrictions and related domestic or foreign regulations may limit the use and adoption of our solutions and adversely affect our business.

Personal privacy, information security, and data protection are significant issues in the United States, Europe and many other jurisdictions where we have operations or offer our products. The regulatory framework governing the collection, processing, storage and use of confidential and proprietary business information and personal data is rapidly evolving. The United States, federal and various state and foreign governments have adopted or proposed requirements regarding the collection, distribution, use, security and storage of personally identifiable information and other data relating to individuals, and federal and state consumer protection laws are being applied to enforce regulations related to the online collection, use and dissemination of data.

Further, many foreign countries and governmental bodies, including the European Union (EU), where we conduct business, have laws and regulations concerning the collection and use of personal data obtained from their residents or by businesses operating within their jurisdiction. These laws and regulations often are more restrictive than those in the United States. Laws and regulations in these jurisdictions apply broadly to the collection, use, storage, disclosure and security of data that identifies or may be used to identify or locate an individual, such as names, email addresses and, in some jurisdictions, IP addresses.

We also expect that there will continue to be new proposed laws, regulations and industry standards concerning privacy, data protection and information security in the United States, the EU, and other jurisdictions. For example, the European Commission has adopted a General Data Protection Regulation, which will be fully effective on May 25, 2018, that will supersede current EU data protection legislation, impose more stringent EU data protection requirements, and provide for greater penalties for noncompliance. We cannot yet determine the impact such future laws, regulations and standards may have on our business. Privacy, data protection and information security laws and regulations are often subject to differing interpretations, may be inconsistent among jurisdictions, and may be alleged to be inconsistent with our current or future practices. Additionally, we may be bound by contractual requirements applicable to our collection, use, processing, and disclosure of various types of data, including personal data, and may be bound by, or voluntarily comply with, self-regulatory or other industry standards relating to these matters. These and other requirements could reduce demand for our products, increase our costs, impair our ability to grow our business, or restrict our ability to store and process data or, in some cases, impact our ability to offer our service in some locations and may subject us to liability. Any failure or perceived failure to comply with applicable laws, regulations, industry standards, and contractual obligations may adversely affect our business. Further, in view of new or modified federal, state or foreign laws and regulations, industry standards, contractual obligations and other legal obligations, or any changes in their interpretation, we may find it necessary or desirable to fundamentally change our business activities and practices or to expend significant resources to modify our product and otherwise adapt to these changes. We may be unable to make such changes and modifications in a commercially reasonable manner or at all, and our ability to develop new products and features could be limited.

The costs of compliance with and other burdens imposed by laws, regulations and standards may limit the use and adoption of our service and reduce overall demand for it, or lead to significant fines, penalties or liabilities for any

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noncompliance. Privacy, information security, and data protection concerns, whether valid or not valid, may inhibit market adoption of our platform, particularly in certain industries and foreign countries.

We expect that we will experience long and unpredictable sales cycles, which may impact our operating results.

The sales cycle between initial customer contact and execution of a contract or license agreement with a customer or purchaser of our products can vary widely. We expect that our sales cycles will be long and unpredictable due to several factors, including but not limited to:

- the need to educate potential customers about our patent rights and our product and service capabilities;
- our customers' willingness to invest potentially substantial resources and modify their network infrastructures to take advantage of our products;
- our customers' budgetary constraints;
- the timing of our customers' budget cycles;
- delays caused by customers' internal review processes; and
- long sales cycles that may increase the risk that our financial resources are exhausted before we are able to generate significant revenue.

In addition, potential customers of our products include local, state, federal and foreign government authorities. Sales to government authorities can be extended and unpredictable. Government authorities generally have complex budgeting, purchasing, and regulatory processes that govern their capital spending, and their spending is likely to be adversely impacted by economic conditions. In addition, in many instances, sales to government authorities may require field trials and may be delayed by the time it takes for government officials to evaluate multiple competing bids, negotiate terms, and award contracts.

For these reasons the sales cycle associated with our products is subject to a number of significant risks that are beyond our control. Consequently, if our forecasted customer orders are not realized or delayed, our revenues and results of operations could be materially and adversely affected.

If we are unable to expand our revenue sources or establish, sustain, grow or replace relationships with a diversified customer base, our revenues may be limited.

We currently generate revenue from a limited number of customers that have entered Settlement and License Agreements. Although our GABRIEL Collaboration Suite™ is not currently generating revenue, it will take time for us to grow our installed user base and generate new customers. Additionally, there is no guarantee that we will be able to derive revenue from new customers, sustain or increase revenue from existing customers or replace customers from whom we currently generate revenue. As a result, our revenue may be limited or static.

We have limited technical resources and are at an early stage in commercialization of our GABRIEL Collaboration Suite™.

Part of our business includes the internal development of commercial products we seek to monetize. This aspect of our business may require significant capital, time and resources and we cannot guarantee that it will be successful or meet our expectations. We currently have only one commercial product, the GABRIEL Collaboration Suite™. As such, we have a small technical team, which may limit our ability to rapidly adapt our product to customer requirements or add new product features to maintain our competitive edge and drive adoption. Based on the scale of our technical resources, our limited historical financial data upon which to base our projected revenue or planned operating expenses related to our GABRIEL Collaboration Suite™, we may not be able to effectively:

- generate revenues or profit from product sales;
- drive adoption of our products;
- attract and retain customers for our products;
- provide appropriate levels of customer training and support for our products;
- implement an effective marketing strategy to promote awareness of our products;

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- focus our research and development efforts in areas that generate returns on our efforts;
- anticipate and adapt to changes in our market; or
- protect our products from any system failures or other breaches.

In addition, a high percentage of our expenses are and will continue to be fixed. Accordingly, if we do not generate revenue as and when anticipated, our losses may be greater than expected and our operating results will suffer.

Our products are highly technical and may contain undetected errors, which could cause harm to our reputation and adversely affect our business.

Our products are highly technical and complex and, when deployed, may contain errors or defects. Despite testing, some errors in our products may only be discovered after a product has been installed and used by customers. Any errors or defects discovered in our products after commercial release could result in failure to achieve market acceptance, loss of revenue or delay in revenue recognition, loss of customers and increased service and warranty cost, any of which could adversely affect our business, operating results and financial condition. In addition, we could face claims for product liability, tort or breach of warranty, including claims relating to changes to our products made by our channel partners. The performance of our products could have unforeseen or unknown adverse effects on the networks over which they are delivered as well as on third-party applications and services that utilize our services, which could result in legal claims against us, harming our business. Furthermore, we expect to provide implementation, consulting and other technical services in connection with the implementation and ongoing maintenance of our products, which typically involves working with sophisticated software, computing and communications systems. We expect that our contracts with customers will contain provisions relating to warranty disclaimers and liability limitations, which may not be upheld. Defending a lawsuit, regardless of its merit, is costly and may divert management's attention and adversely affect the market's perception of us and our products. In addition, if our business liability insurance coverage proves inadequate or future coverage is unavailable on acceptable terms or at all, our business, operating results and financial condition could be adversely impacted.

Malfunctions of third-party communications infrastructure, hardware and software expose us to a variety of risks that we cannot control.

Our business will depend upon, among other things, the capacity, reliability, security and unimpeded access of the infrastructure owned by third parties that we will use to deploy our offerings. We have no control over the operation, quality or maintenance of a significant portion of that infrastructure or whether or not those third parties will upgrade or improve their equipment. We depend on these companies to maintain the operational integrity of our connections. If one or more of these companies is unable or unwilling to supply or expand its levels of service to us in the future, our operations could be severely interrupted. Also, to the extent that the number of users of networks utilizing our current or future products suddenly increases, the technology platform and secure hosting services which will be required to accommodate a higher volume of traffic may result in slower response times or service interruptions. System interruptions or increases in response time could result in a loss of potential or existing users and, if sustained or repeated, could reduce the appeal of the networks to users. In addition, users depend on real-time communications; outages caused by increased traffic could result in delays and system failures. These types of occurrences could cause users to perceive that our solution does not function properly and could therefore adversely affect our ability to attract and retain licensees, strategic partners and customers.

System failure or interruption or our failure to meet increasing demands on our systems could harm our business.

The success of our license and service offerings will depend on the uninterrupted operation of various systems, secure data centers and other computer and communication networks that we establish. To the extent, the number of users of networks utilizing our future products suddenly increases, the technology platform and hosting services which will be required to accommodate a higher volume of traffic may result in slower response times, service interruptions or delays or system failures. Our systems and operations will also be vulnerable to damage or interruption from, among other things:

- power loss, transmission cable cuts and other telecommunications failures;
- damage or interruption caused by fire, earthquake, and other natural disasters;
- computer viruses or software defects; and

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- physical or electronic break-ins, sabotage, intentional acts of vandalism, terrorist attacks and other events beyond our control.

System interruptions or failures and increases or delays in response time could result in a loss of potential or existing users and, if sustained or repeated, could reduce the appeal of the networks to users. These types of occurrences could cause users to perceive that our solution does not function properly and could therefore adversely affect our ability to attract and retain licensees, strategic partners and customers.

Any significant problem with our systems or operations could result in lost revenue, customer dissatisfaction or lawsuits against us. A failure in the operation of our secure domain name registration system could result in the inability of one or more registrars to register and maintain secure domain names for a period of time. A failure in the operation or update of the master directory that we plan to maintain could result in deletion or discontinuation of assigned secure domain names for a period of time. The inability of the registrar systems we establish, including our back-office billing and collections infrastructure, and telecommunications systems to meet the demands of an increasing number of secure domain name requests could result in substantial degradation in our customer support service and our ability to process registration requests in a timely manner.

Our ability to sell our solutions will be dependent on the quality of our technical support, and our failure to deliver high-quality technical support services could have a material adverse effect on our sales and results of operations.

If we do not effectively assist our customers in deploying our products, succeed in helping our customers quickly resolve post-deployment issues and provide effective ongoing support, or if potential customers perceive that we may not be able achieve to the foregoing, our ability to sell our products would be adversely affected, and our reputation with current and potential customers could be harmed. In addition, as we expand our operations internationally, our technical support team will face additional challenges, including those associated with delivering support, training and documentation in languages other than English. Our failure to deliver and maintain high-quality technical support services to our customers could result in customers choosing to use our competitors' products and support services instead of ours in the future.

Telephone carriers have petitioned governmental agencies to enforce regulatory tariffs, which, if granted, would increase the cost of online communication, and such increase in cost may impede the growth of online communication and adversely affect our business.

Use of the Internet has over-burdened existing telecommunications infrastructures, and many high traffic areas have begun to experience interruptions in service. As a result, certain local telephone carriers have petitioned governmental agencies to enforce regulatory tariffs on IP telephony traffic that crosses over their traditional telephone networks. If the relief sought in these petitions is granted, the costs of communicating via online could increase substantially, potentially adversely affecting the growth in the use of online secure communications. Any of these developments could have an adverse effect on our business.

The departure of Kendall Larsen, our Chief Executive Officer and President, and/or other key personnel could compromise our ability to execute our strategic plan and may result in additional severance costs to us.

Our success largely depends on the skills, experience and performance of our key personnel. Due to the specialized nature of our business and limited staff, we are particularly dependent on Kendall Larsen, our Chief Executive Officer and President. We have no employment agreements with any of our key executives that prevent them from leaving us at any time. In addition, we do not maintain key person life insurance for any of our officers or key employees. The loss of Mr. Larsen, or our failure to retain other key personnel or failure to adequately plan for the succession of key personnel, would jeopardize our ability to execute our strategic plan and materially harm our business.

We will need to recruit and retain additional qualified personnel to successfully grow our business.

Our future success will depend, in part, on our ability to attract and retain qualified engineering, operations, marketing, sales and executive personnel. Inability to attract and retain such personnel could adversely affect our business. Competition for engineering, operations, marketing, sales and executive personnel is intense, particularly in the technology and Internet sectors and in the regions where we conduct our business. We may need to invest significant amounts of cash and equity to attract and retain employees and expend significant time and resources to identify, recruit, train and integrate such employees, and we may never realize returns on these investments. Additionally, we can provide no assurance that we will attract or retain such personnel.

Our international expansion will subject us to additional costs and risks, and our plans may not be successful.

We expect to expand our presence internationally through, for example, international partnerships with third parties and the possibility of establishing international subsidiaries and offices. Our international expansion may present challenges and risks, including those inherent in international operations, to us and may require significant attention from management. We may not be successful in our international partnerships, expansion efforts, and we may incur significant operating expenses

We may identify future material weakness which may result in late filings, increased costs or declines in our share price.

Although we believe that we currently maintain effective control over our disclosures and procedures and internal control over financial reporting, we may in the future identify deficiencies regarding the design and effectiveness of our system of internal control over financial reporting. If we experience any material weaknesses in our internal control over financial reporting the future or are unable to provide unqualified management or attestation reports about our internal controls, we may be unable to meet financial and other reporting deadlines and may incur costs associated with remediation, and any of which could cause our share price to decline.

Risks Related to Our Common Stock

Trading in our common stock is limited and the price of our common shares may be subject to substantial volatility.

Our common stock is listed on the NYSE American LLC (formerly the NYSE MKT LLC). Over the past years, the market price of our common stock has experienced significant fluctuations. Between January 1, 2017, and December 31, 2017, the reported last adjusted closing price on NYSE American LLC for our common stock ranged between \$1.85 and \$8.25 per share. The price of our common stock may continue to be volatile as a result of several factors, some of which are beyond our control. These factors include, but not limited to, the following:

- developments or lack thereof in any then-outstanding litigation;
- quarterly variations in our operating results;
- large purchases or sales of common stock or derivative transactions related to our stock;
- actual or anticipated announcements of new products or services by us or competitors;
- general conditions in the markets in which we compete; and
- general social, political, economic and financial conditions, including the significant volatility in the global financial markets.

In addition, we believe there has been and may continue to be substantial trading in derivatives of our stock, including short selling activity or related similar activities, which are beyond our control and which may be beyond the full control of the SEC and Financial Institutions Regulatory Authority or “FINRA”. While the SEC and FINRA rules prohibit some forms of short selling and other activities that may result in stock price manipulation, such activity may nonetheless occur without detection or enforcement. We have held conversations with regulators concerning trading activity in our stock; however, there can be no assurance that should there be any illegal manipulation in the trading of our stock, it will be detected, prosecuted or successfully eradicated. Significant short selling or other types of market manipulation could cause our stock trading price to decline, to become more volatile, or both.

The market price of our common stock has been and may continue to be volatile, and you could lose all or part of your investment.

The trading price of our common stock has been volatile since our initial public offering, and is likely to continue to be volatile. Factors that could cause fluctuations in the market price of our common stock include, but are not limited to the following:

- price and volume fluctuations in the overall stock market from time to time;
- volatility in the market prices and trading volumes of companies in our industry or companies that investors consider comparable;
- changes in operating performance and stock market valuations of other companies generally, or those in our industry;

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- sales of shares of our common stock by us or our stockholders;
- failure of securities analysts to maintain coverage of us, changes in financial estimates by securities analysts who follow us, or our failure to meet these estimates or the expectations of investors;
- the financial projections we may provide to the public, any changes in those projections or our failure to meet those projections;
- announcements by us or our competitors of new products or services;
- the public's reaction to our press releases, other public announcements and filings with the SEC;
- rumors and market speculation involving us or other companies in our industry;
- actual or anticipated changes in our results of operations;
- actual or anticipated developments in our business, our competitors' businesses or the competitive landscape generally;
- litigation involving us, our industry or both, or investigations by regulators into our operations or those of our competitors;
- announced or completed acquisitions of businesses or technologies by us or our competitors;
- new laws or regulations or new interpretations of existing laws or regulations applicable to our business;
- changes in accounting standards, policies, guidelines, interpretations or principles;
- any significant change in our management; and
- general economic conditions and slow or negative growth of our markets.

Further, in recent years the stock markets have experienced extreme price and volume fluctuations that have affected and continue to affect the market prices of equity securities of many companies. These fluctuations often have been unrelated or disproportionate to the operating performance of those companies. In addition, the stock prices of many technology companies have experienced wide fluctuations that have often been unrelated to the operating performance of those companies. These broad market and industry fluctuations, as well as general economic, political and market conditions such as recessions, government shutdowns, interest rate changes the stability of the EU and the exit of the United Kingdom or international currency fluctuations, may cause the market price of our common stock to decline. In the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies.

We do not currently pay dividends on our common stock and thus stockholders must look to appreciation of our common stock to realize a gain on their investments.

Our dividend policy is within the discretion of our Board of Directors and will depend upon various factors, including our business, financial condition, results of operations, capital requirements, and investment opportunities. We therefore cannot make assurances that our Board of Directors will determine to pay regular or special dividends in the future. Accordingly, unless our Board of Directors determines to pay dividends, stockholders will be required to look to appreciation of our common stock to realize a gain on their investment. This appreciation may not occur.

The exercise of our outstanding stock options, RSU's and issuance of new shares would result in a dilution of our current stockholders' voting power and an increase in the number of shares eligible for future resale in the public market which may negatively impact the market price of our stock.

The exercise of our outstanding vested stock options would dilute the ownership interests of our existing stockholders. As of December 31, 2017, we had outstanding options to purchase an aggregate of 5,138,066 shares of common stock representing approximately 9% of our total shares outstanding of which 3,129,233 were vested and therefore exercisable. To the extent outstanding stock options are exercised, additional shares of common stock will be issued, existing stockholders' percentage voting interests will decline and the number of shares eligible for resale in the public market will increase. Such increase may have a negative effect on the value or market trading price of our common stock.

The market price of our common stock may decline because our operating results may not be consistent and may be difficult to predict.

Our reported net income has fluctuated in the past due to several factors. We expect that our future operating results may also fluctuate due to the same or similar factors. We had a net loss of \$29.2 million for the year ended December 31, 2015, a net loss of \$28.6 million for the year ended December 31, 2016, and a net loss of \$17.3 million for the year ended December 31, 2017, with an accumulated deficit of \$176 million. The following include some of the factors that may cause our operating results to fluctuate:

- the outcome of actions to enforce our intellectual property rights currently in progress or that we may undertake in the future, and the timing thereof;
- the amount and timing of receipt of license fees from potential infringers, licensees or customers;
- the rate of adoption of our patented technologies;
- the number of new license arrangements we may execute, or that may expire, within a particular period and the scope of those licenses, including the number of our patents which are licensed, the extent of prior infringement of our patent rights, royalty rates, timing of payment obligations, expiration date etc.;
- the success of a licensee in selling products that use our patented technologies; and
- the amount and timing of expenses related to our patent filings and enforcement proceedings, including litigation, related to our intellectual property rights.

These fluctuations may make our business particularly difficult to manage, adversely affect our business and operating results, make our operating results difficult for investors to predict and, further, cause our results to fall below investor's expectations and adversely affect the market price of our common stock.

Because ownership of our common stock is concentrated, investors may have limited influence on stockholder decisions.

As of December 31, 2017, our executive officers and directors beneficially owned approximately 12% of our outstanding common stock. In addition, a group of stockholders that, as of December 31, 2007, held 4,766,666 shares, or approximately 8% of our outstanding common stock, have entered into a voting agreement with us that requires them to vote all of their shares of our voting stock in favor of the director nominees approved by our Board of Directors at each director election going forward, and in a manner that is proportional to the votes cast by all other voting shares as to any other matters submitted to the stockholders for a vote. However, we cannot be certain how many shares of our common stock this group of stockholders currently owns. Because of their beneficial ownership interest, our officers and directors could significantly influence stockholder actions of which you disapprove or that are contrary to your interests. This ability to exercise significant influence could prevent or significantly delay another company from acquiring or merging with us.

Our protective provisions in our amended and restated certificate of incorporation and bylaws could make it difficult for a third party to successfully acquire us even if you would like to sell your stock to them.

We have a number of protective provisions in our amended and restated certificate of incorporation and bylaws that could delay, discourage or prevent a third party from acquiring control of us without the approval of our Board of Directors. These protective provisions include:

- **A staggered Board of Directors:** This means that only one or two directors (since we have a five-person Board of Directors) will be up for election at any given annual meeting. This has the effect of delaying the ability of stockholders to affect a change in control of us because it would take two annual meetings to effectively replace a majority of the Board of Directors.
- **Blank check preferred stock:** Our Board of Directors has the authority to establish the rights, preferences and privileges of our 10,000,000 authorized, but unissued, shares of preferred stock. Therefore, this stock may be issued at the discretion of our Board of Directors with preferences over your shares of our common stock in a manner that is materially dilutive to you. In addition, blank check preferred stock can be used to create a "poison pill" which is designed to deter a hostile bidder from buying a controlling interest in our stock without the approval of our Board of Directors. We have not adopted such a "poison pill," but our Board of Directors has the ability to do so in the future, very rapidly and without stockholder approval.

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- **Advance notice requirements for director nominations and for new business to be brought up at stockholder meetings:** Stockholders wishing to submit director nominations or raise matters to a vote of the stockholders must provide notice to us within very specific date windows and in very specific form in order to have the matter voted on at a stockholder meeting. This has the effect of giving our Board of Directors and management more time to react to stockholder proposals generally and could also have the effect of disregarding a stockholder proposal or deferring it to a subsequent meeting to the extent such proposal is not raised properly.
- **No stockholder actions by written consent:** No stockholder or group of stockholders may take actions rapidly and without prior notice to our Board of Directors and management or to the minority stockholders. Along with the advance notice requirements described above, this provision also gives our Board of Directors and management more time to react to proposed stockholder actions.
- **Super majority requirement for stockholder amendments to the By-laws:** Stockholder proposals to alter or amend our By-laws or to adopt new By-laws can only be approved by the affirmative vote of at least 66 2/3% of the outstanding shares of our common stock.
- **No ability of stockholders to call a special meeting of the stockholders:** Only the Board of Directors or management can call special meetings of the stockholders. This could mean that stockholders, even those who represent a significant percentage of our shares of common stock, may need to wait for the annual meeting before nominating directors or raising other business proposals to be voted on by the stockholders.

In addition, the provisions of Section 203 of the Delaware General Corporate Law govern us. These provisions may prohibit large stockholders, in particular those owning 15% or more of our outstanding voting stock, from merging or combining with us for a certain period of time.

These and other provisions in our amended and restated certificate of incorporation, our bylaws and under Delaware law could discourage potential takeover attempts, reduce the price that investors might be willing to pay for shares of our common stock in the future and result in the market price being lower than it would be without these provisions.

Item 1B. *Unresolved Staff Comments.*

None

Item 2. *Properties*

Our principal executive offices are located at 308 Dorla Court, Suite 206, Zephyr Cove, Nevada, 89448. We lease this property, which comprises approximately 2,090 square feet of office space, from a third party for a term that ends in October 2019. We have no other properties and believe that our office facility is suitable and appropriately supports our current business needs.

Item 3. *Legal Proceedings*

We have eleven intellectual property infringement lawsuits pending in the United States District Court for the Eastern District of Texas, Tyler Division, and United States Court of Appeals for the Federal Circuit (“USCAFC”).

VirnetX Inc. v. Apple, Inc. (Case 6:12-CV-00855-LED)

On March 30, 2015, the United States Court for the Eastern District of Texas, Tyler Division, issued an order finding substantial overlap between the remanded portions of the Civil Action Case 6:10-CV-00417-LED (VirnetX vs. Cisco et. al.), and the ongoing Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case. The jury trial in this case was held on January 25, 2016. On February 4, 2016, a jury in the United States Court for the Eastern District of Texas, Tyler Division, awarded us \$625.6 million in a verdict against Apple Inc. for infringing four of our US patents, marking it the second time a federal jury has found Apple liable for infringing VirnetX’s patented technology. The verdict includes royalties awarded to us based on an earlier patent infringement finding (**Case 6:10-CV-00417-LED**) against Apple. The jury found that Apple’s modified VPN On-Demand, iMessage and FaceTime services infringed VirnetX’s patents and that Apple’s infringement was willful. In addition to determining the royalty owed by Apple for its prior infringement, this verdict also includes an award based on the

jury's finding that Apple's modified VPN On Demand, iMessage and FaceTime services have continued to infringe VirnetX's patents. The post-trial hearing was held on May 25, 2016 in the United States Court for the Eastern District of Texas, Texarkana Division. On July 29, 2016, the court issued a new order, vacating its previous orders consolidating the cases (Case No. 6:10-cv-417, Docket No. 878 ("Apple I case"); Case No. 6:12-cv-855, Docket No. 220 ("Apple II case")), ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II case will be retried after Apple I case. Events and developments subsequent to the order from the court are described to support Apple I and Apple II matters.

VirnetX Inc. v. Cisco Systems, Inc. et al. (Case 6:10-CV-00417-LED) ("Apple I")

On August 11, 2010, we initiated a lawsuit by filing a complaint against Aastra USA, Inc. ("Aastra"), Apple, Cisco Systems, Inc. ("Cisco"), and NEC Corporation ("NEC") in the United States District Court for the Eastern District of Texas, Tyler Division, pursuant to which we alleged that these parties infringe on certain of our patents. We sought damages and injunctive relief. Aastra and NEC agreed to sign license agreements with us and we agreed to drop all the accusations of infringement against them. At the pre-trial hearing, the judge decided to conduct separate jury trial for each defendant, and try only the case against Apple on the scheduled trial date. The jury trial of our case against Cisco was held on March 4, 2013. The jury in our case against Cisco came back with a verdict of non-infringement also determined that all our patents-in-suit patents are not invalid. Our motions for a new trial and Cisco's infringement of certain VirnetX patents were denied and the case against Cisco was closed.

The jury trial of our case against Apple was held on October 31, 2012. On November 6, 2012, a jury in the United States Court for the Eastern District of Texas, Tyler Division, awarded us over \$368 million in a verdict against Apple for infringing four of our patents. On February 26, 2013, the court issued its Memorandum Opinion and Order regarding post-trial motions resulting from the prior jury verdict denying Apple's motion to reduce the damages awarded by the jury for past infringement. The Court further denied Apple's request for a new trial on the liability and damages portions of the verdict and granted our motions for pre-judgment interest, post-judgment interest, and post-verdict damages to date. The Court ordered that Apple pay \$34 thousand in daily interest up to final judgment and \$330 thousand in daily damages for infringement up to final judgment for certain Apple devices included in the verdict. The Court denied our request for a permanent injunction and severed the future infringement portion into its own separate proceedings under Case 6:13-CV-00211-LED.

On July 3, 2013, Apple filed an appeal of the judgment dated February 27, 2013 and order dated June 4, 2013 denying Apple's motion to alter or amend the judgment to the USCAFC. On September 16, 2014, USCAFC issued their opinion, affirming the jury's finding that all 4 of our patents are valid, confirming the jury's finding of infringement of VPN on Demand under many of the asserted claims of our '135 and '151 patents, and confirming the district's court's decision to allow evidence concerning our licenses and royalty rates in connection with the determination of damages. In its opinion, the USCAFC also vacated the jury's damages award and the district court's claim construction with respect to parts of our '504 and '211 patents and remanded the damages award and determination of infringement with respect to FaceTime –for further proceedings consistent with its opinion. On October 16, 2014, we filed a petition with the USCAFC, requesting a rehearing and rehearing en banc of the Federal Circuit's September 14, 2014, decision concerning VirnetX's litigation against Apple Inc. On December 16, 2014, USCAFC denied our petition requesting a rehearing and rehearing en banc of the Federal Circuit's September 14, 2014, decision and remanded the case back to the Eastern District of Texas, Tyler Division, for further proceedings consistent with its opinion. On February 25, 2015, USCAFC granted Apple's motions to lift stay of proceedings and vacate Case 6:13-CV-00211-LED. On March 30, 2015, the court issued an order finding substantial overlap between the remanded portions of this case and the ongoing Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case.

On July 29, 2016, the court issued a new order, vacating its previous orders consolidating the cases Apple I case and Apple II case, ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II will be retried after Apple I case. The jury trial in this case was held on September 26, 2016. On September 30, 2016, a Jury in the United States Court for the Eastern District of Texas, Tyler Division, in the case VirnetX Inc., et al. v. Apple Inc., No. Apple I, has awarded VirnetX \$302.4 million in a verdict against Apple for infringing four VirnetX patents, marking the third time a federal jury has found Apple liable for infringing VirnetX's patented technology.

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The verdict includes royalties awarded to VirnetX, for unresolved issues in the Apple I case, remanded back from the USCAFC, related to (1) damages owed to VirnetX for infringement by Apple's original VPN-on-Demand (VOD) and (2) the alleged infringement by Apple's original FaceTime product, under the new claim construction of "secure communication link" pertaining to the '504 and '211 patents by the USCAFC, and the damages associated with that infringement. The hearing on all the post-trial motions was held on November 22, 2016.

On September 29, 2017, the United States District Court for the Eastern District of Texas, Tyler Division, entered Final Judgement and issued its Memorandum Opinion and Order regarding post-trial motions resulting from the prior \$302.4 million jury verdict for VirnetX in the Apple I case.

In the Order, the Court denied all of Apple's post-trial motions including motion for judgment as a matter of law of non-infringement, motion for judgment as a matter of law on damages, motion for a new trial on infringement, and motion for a new trial on damages. The Court granted all VirnetX's post-trial motions including motion for willful infringement and enhanced the royalty rate during the willfulness period by 50 percent, from \$1.20 to \$1.80 per device, awarding VirnetX, enhanced damages in the amount of \$41.3 million against Apple thereby, granting VirnetX a total sum of \$343.7 million in pre-interest damages. The Court also awarded costs, certain attorneys' fees, and prejudgment interest to VirnetX, and directed the parties to meet and confer regarding these amounts. On October 13, 2017, having met and conferred and having reached agreements on all amounts, parties jointly filed a motion asking the Court to grant VirnetX an additional sum in the amount of \$96 million in agreed Bill of Costs, Attorneys' Fees, and Prejudgment Interest. The Final Judgement is only subject to appeal stemming from new issues unresolved in the Apple I case, remanded back from the United States Court of Appeals for the Federal Circuit. The total Final Judgement amount including Jury Verdict, Willful Infringement, Interest, Costs and Attorney Fees is \$439.7 million.

On October 27, 2017 Apple filed its notice of appeal of the Final Judgment entered on September 29, 2017 to the United States Court of Appeals for the Federal Circuit. This case has now been closed and events and developments subsequent to the notice of appeal are described below under **VirnetX Inc. v. Cisco Systems, Inc. (USCAFC Case 18-1197-CB) (Appeal of Apple I Case)**.

VirnetX Inc. v. Apple, Inc. (Case 6:12-CV-00855-LED) ("Apple II")

On November 6, 2012, we filed a complaint against Apple in the United States District Court for the Eastern District of Texas, Tyler Division for willfully infringing four of our patents, U.S. Patent Nos. 6,502,135, 7,418,504, 7,921,211 and 7,490,151, and seeking both an unspecified amount of damages and injunctive relief. The accused products include the iPhone 5, iPod Touch 5th Generation, iPad 4th Generation, iPad mini, and the latest Macintosh computers. Due to their release dates, these products were not included in the previous lawsuit that concluded with a Jury verdict on November 6, 2012 that was subsequently upheld by the United States District Court for the Eastern District of Texas, Tyler Division, on February 26, 2013. On July 1, 2013, we filed a consolidated and amended complaint to include U.S. Patent No. 8,051,181 and consolidate Civil Action No. 6:11-cv-00563-LED. On August 27, 2013, we filed an amended complaint including allegations of willful infringement related to U.S. Patent No. 8,504,697 seeking both damages and injunctive relief. The Markman hearing in this case was held on May 20, 2014 and on August 8, 2014, issued its Markman Order, denying Apple's motion for summary judgment of indefiniteness, in which Apple alleged that some of the disputed claims terms in the patents asserted by us were invalid for indefiniteness. In a separate order, the court granted in part and denied in part our motion for partial summary judgment on Apple's invalidity counterclaims, precluding Apple from asserting invalidity as a defense against infringement of the claims that were tried before a jury in our prior litigation against Apple (VirnetX vs. Cisco et. al., Case 6:10-CV-00417-LED). The jury trial in this case was scheduled for October 13, 2015. On March 30, 2015, the court issued an order finding substantial overlap between this case and the remanded portions of Case 6:10-CV-00417-LED (VirnetX vs. Cisco et. al.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case. On July 29, 2016, the court issued a new order, vacating its previous orders consolidating the cases Apple I case and Apple II case, ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II will be retried after Apple I case.

On September 29, 2017, the Court issued an order denying Apple's Motion to Stay. The Court ordered the parties to meet and confer and file a joint motion with a proposed trial date by October 13, 2017. The parties have met, conferred and filed a joint motion on the proposed trial dates. On November 9, 2017, the court issued its order setting this case for jury selection on April 2, 2018 in Tyler, Texas.

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On January 5, 2018, Apple filed a Petition for Writ of Mandamus with the USCAFC requesting the court to stay the upcoming limited retrial of the Apple II pending the USCAFC's decision in related consolidated appeal *VirnetX Inc. v. Apple Inc.*, Cases 2017-1591. On February 22, 2018, the USCAFC issued its order denying Apple's Petition for Writ of Mandamus. The Apple II case is proceeding on schedule for jury selection on April 2, 2018 per the district court's order.

VirnetX Inc. v. Cisco Systems, Inc. (USCAFC Case 18-1197-CB) (Appeal of Apple I Case)

On October 27, 2017 Apple filed its notice of appeal of the Final Judgment entered on September 29, 2017 to the United States Court of Appeals for the Federal Circuit.

On January 5, 2018, Apple filed a motion requesting a stay of the briefing schedule in this appeal pending this court's decision in related consolidated appeal *VirnetX Inc. v. Apple Inc.*, Cases 2017-1591. On January 24, 2018, USCAFC denied Apple's motion requesting a stay of the briefing schedule and ordered Apple to file its opening brief no later than March 19, 2018.

VirnetX Inc. v. Apple, Inc. (Case 15-1934)

On July 10, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the United States Patent and Trademark Office, Patent Trial and Appeal Board ("PTAB") in IPR2014-00237 and IPR2014-00238, related to U.S. Patent No. 8,504,697. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on the grounds discussed in IPR2014-00238. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-1211)

On September 28, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2014-00403 and IPR2014-00404 and on October 22, 2015 for IPR2014-00481 and IPR2014-00482 involving our U.S. Patent Nos. 7,188,180, and 7,987,274. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on the grounds discussed in IPR2014-00403 and IPR2014-00481. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-1480)

On November 30, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in inter-partes reexamination no. 95/001,949 related to U.S. Patent No. 8,051,181. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on certain grounds. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-119)

On March 4, 2016, we filed a petition for writ of mandamus with the USCAFC, requesting the USCAFC's intervention to revoke the PTAB's decision joining Apple to IPR2015-01046 and IPR2015-01047, related to U.S. Patent Nos. 6,502,135 and 7,490,151. On March 18, 2016, the USCAFC denied the petition without prejudice to us raising the arguments on appeal after the PTAB's final decisions. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 17-1131)

On October 31, 2016, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2015-00810 and IPR2015-00812, on November 9, 2016 for IPR2015-00811, and on November 28, 2016 for IPR2015-00866, IPR2015-00868, IPR2015-00870 and IPR2015-00871 involving our U.S. Patent Nos. 8,868,705, 8,850,009, 8,458,341, 8,516,131, and 8,560,705. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral argument were held on March 5, 2018. We are awaiting the courts ruling in this matter.

VirnetX Inc. v. The Mangrove Partners (Case 17-1368)

On December 16, 2016, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2015-01046, and on December 20, 2016 for IPR2015-1047, involving our U.S. Patent Nos. 6,502,135, and 7,490,151. These appeals also involve Apple, Inc. and one of them involves Black Swamp IP, LLC. On April 27, 2017, the USCAFC stayed these appeals pending the USCAFC's en banc decision in *Wi-Fi One, LLC v. Broadcom Corporation*, No. 2015-1944. The stay was lifted on January 31, 2018, and briefing is now ongoing.

VirnetX Inc. v. Apple Inc., Cisco Systems, Inc. (Case 17-1591)

On February 7, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in inter-partes reexamination nos. 95/001,788, 95/001,789, and 95/001,856 related to our U.S. Patent Nos. 7,921,211 and 7,418,504. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral arguments have not yet been scheduled.

VirnetX Inc. v. Apple Inc. (Case 17-2490)

On August 23, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2016-00331 and IPR2016-00332 involving our U.S. Patent No. 8,504,696. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral arguments have not yet been scheduled.

In re VirnetX Inc. (Case 17-2593)

On September 22, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2016-00693 and IPR2016-00957 involving our U.S. Patent Nos. 7,418,504 and 7,921,211. These appeals have been consolidated. The briefing in these appeals is ongoing. The entity that initiated the IPRs, Black Swamp IP, LLC, indicated on October 18, 2017, that it would not participate in the appeals. On November 27, 2017, the United States Patent and Trademark Office indicated that it would intervene in the appeals. On January 19, 2018, the USCAFC stayed these appeals pending the USCAFC's decision in Case 17-1591.

One or more potential intellectual property infringement claims may also be available to us against certain other companies who have the resources to defend against any such claims. Although we believe these potential claims are worth pursuing, commencing a lawsuit can be expensive and time-consuming, and there is no assurance that we will prevail on such potential claims. In addition, bringing a lawsuit may lead to potential counterclaims which may preclude our ability to commercialize our initial products, which are currently in development.

Currently, we are not a party to any other pending legal proceedings, and are not aware of any proceeding threatened or contemplated against us by any governmental authority or other party.

Item 4. Mine Safety Disclosure.

Not applicable

PART II**Item 5. Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.****Market Information**

Our common stock currently trades under the symbol "VHC" on the NYSE American LLC.

The following table shows the price range of our common stock, as reported on the NYSE American LLC, for each quarter ended during the last two fiscal years.

VirnetX Holding Corp	HIGH	LOW
Year ended, December 31, 2017:		
First quarter	\$ 2.75	\$ 1.70
Second quarter	\$ 5.40	\$ 2.02
Third quarter	\$ 4.85	\$ 3.00
Fourth quarter	\$ 8.75	\$ 3.55
Year ended, December 31, 2016:		
First quarter	\$ 9.64	\$ 1.95
Second quarter	\$ 6.50	\$ 3.83
Third quarter	\$ 4.64	\$ 2.14
Fourth quarter	\$ 5.13	\$ 2.10

The closing price of our common stock on the NYSE American LLC on March 14, 2018 was \$4.05 per share.

Holders of Record

As of March 14, 2018, we had 41 stockholders of record. Because many of our shares of common stock are held of record by brokers and other institutions on behalf of stockholders, we are unable to estimate the total number of beneficial stockholders represented by such record holders.

Dividends

We do not currently intend to begin paying a regular dividend in the foreseeable future. Any future determination to declare cash dividends will be made at the discretion of our board of directors and will depend on our financial condition, operating results, capital requirements, general business conditions and other factors that our board of directors may deem relevant.

Securities Authorized for Issuance under Equity Compensation Plan

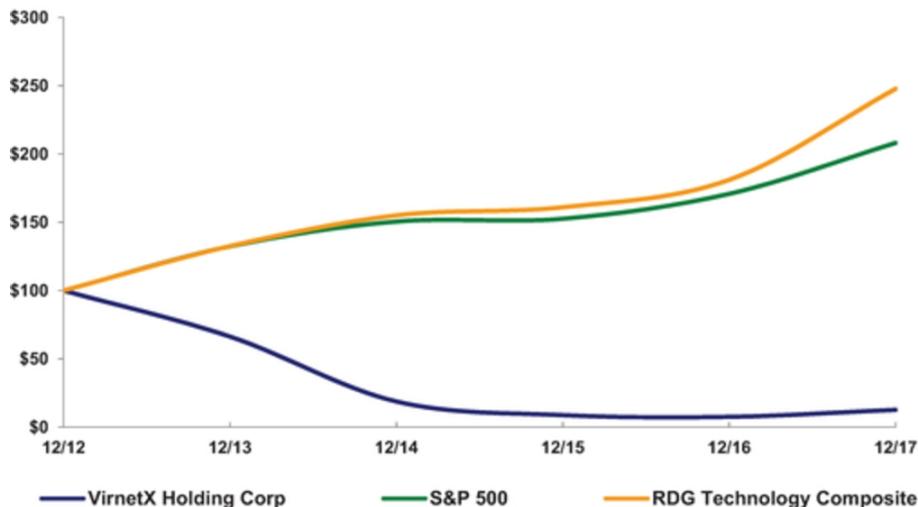
See Item 12, Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters for information regarding securities authorized for issuance.

Stock Performance Graph

This performance graph shall not be deemed “soliciting material” or to be “filed” for purposes of Section 18 of the Securities Exchange Act of 1934, as amended, or the Exchange Act, or incorporated by reference into any filing of VirnetX under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among VirnetX Holding Corp, the S&P 500 Index and the RDG Technology Composite Index



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

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The stock price performance reflected on this graph is not necessarily indicative of future stock price performance. See the disclosure in part I, Item 1A. “Risk Factors”

	12/12	12/13	12/14	12/15	12/16	12/17
VirnetX Holding Corp	\$ 100.00	\$ 66.29	\$ 18.75	\$ 8.78	\$ 7.51	\$ 12.64
S&P 500	\$ 100.00	\$ 132.39	\$ 150.51	\$ 152.59	\$ 170.84	\$ 208.14
RDG Technology Composite	\$ 100.00	\$ 132.51	\$ 155.05	\$ 161.00	\$ 181.12	\$ 247.79

Recent Sales of Unregistered Securities

During the year ended December 31, 2017, we had no sales of unregistered securities and no repurchases of stock.

Item 6. Selected Financial Data. (in thousands except per share data)

The consolidated statement of operations data for the years ended December 31, 2017, 2016 and 2015 and the balance sheet data at December 31, 2017 and 2016, are derived from our audited financial statements included elsewhere in this Annual Report on Form 10-K. The consolidated statement of operations data for the years ended December 31, 2014 and 2013 and the balance sheet data at December 31, 2015, 2014 and 2013 are derived from our audited financial statements not included in this annual report on Form 10-K.

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The selected consolidated financial data below is not necessarily indicative of future performance and should be read in conjunction with Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” and the consolidated financial statements and related notes thereto included in Item 8 of this Annual Report on Form 10-K.

	For the year ended December 31,				
	2017	2016	2015	2014	2013
Consolidated Statement of Operations Data:					
Revenue	\$ 1,547	\$ 1,550	\$ 1,555	\$ 1,249	\$ 2,197
Gain on settlement ^(a)	\$ —	\$ —	\$ —	\$ 23,000	\$ —
Total operating expenses	\$ (18,868)	\$ (30,055)	\$ (30,732)	\$ (36,414)	\$ (30,784)
Income tax expense	\$ (3)	\$ (133)	\$ (8)	\$ (15)	\$ (751)
Net loss	\$ (17,278)	\$ (28,569)	\$ (29,234)	\$ (9,902)	\$ (27,608)
Loss per share	\$ (0.30)	\$ (0.51)	\$ (0.56)	\$ (0.19)	\$ (0.54)
Consolidated Balance Sheet Data:					
Cash and cash equivalents	\$ 3,135	\$ 6,627	\$ 8,726	\$ 18,658	\$ 19,173
Investments available for sale	\$ 1,453	\$ 9,249	\$ 9,954	\$ 22,571	\$ 19,815
Total assets	\$ 7,175	\$ 18,871	\$ 22,172	\$ 45,090	\$ 39,398
Stockholders’ equity	\$ 1,553	\$ 11,147	\$ 15,095	\$ 32,627	\$ 34,024

(a) The gain on settlement in 2014 relates to a cash settlement of litigation with Microsoft.

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

Company Overview

We develop software and technology solutions for securing real-time communications over the Internet. Our patented GABRIEL Connection Technology™ combines industry standard encryption protocols with our patented techniques for automated domain name system, or DNS, lookup mechanisms, and enables users to create a secure communication link using secure domain names over wired or wireless (4G/LTE) networks. Our GABRIEL Collaboration Suite™ is available for download and free trial, for Android, iOS, Windows, Linux and Mac OS X platforms, at <http://www.gabrielsecure.com/>. We continue to enhance our products and add new functionality to our products. We will provide updates to new and existing customers as they are released to the general public. Over 80 small and medium sized businesses have installed our GABRIEL Secure Communication Platform™ and GABRIEL Collaboration Suite™ products in their corporate networks. A number of International Association of Certified ISAO (IACI) have chosen to deploy our software as private and secure e-technology to protect their communications. Several other ISAOs are completing their evaluations before deploying our products within their networks. We are actively recruiting best-of-breed partners in various vertical markets including, healthcare, finance, government, etc, to help us rapidly expand our enterprise customer base. We also intend to establish the exclusive secure domain name registry in the United States and other key markets around the world.

We are a holding company and conduct our operations through our wholly-owned subsidiary, VirnetX, Inc. VirnetX, Inc., was incorporated in the State of Delaware in August 2005. In November 2006, VirnetX, Inc. acquired certain patents from SAIC, now Leidos. In July 2007, we effected a merger by and among VirnetX, Inc., VirnetX Holding Corporation and a wholly-owned subsidiary of VirnetX Holding Corporation, whereby VirnetX, Inc. merged with, and became, a wholly-owned subsidiary of VirnetX Holding Corporation and VirnetX Holding Corporation issued shares of its common stock to the stockholders of VirnetX, Inc. as consideration for the merger. As a result of this merger, the former security holders of VirnetX, Inc. came to own a majority of our outstanding common stock. On October 29, 2007, we changed our name from PASW, Inc. to VirnetX Holding Corporation.

Our portfolio of intellectual property is the foundation of our business model. We currently own approximately 185 U.S. and foreign patents, patent validations and pending applications. Our patent portfolio is primarily focused on securing real-time communications over the Internet, as well as related services such as the establishment and maintenance of a secure domain name registry. Our patented methods also have additional applications in the key areas of device operating systems and network security for Cloud services, M2M communications in areas of Smart City, Connected Car and Connected Home.

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We have submitted a declaration with the 3rd Generation Partnership Project, or 3GPP, identifying a group of our patents and patent applications that we believe are or may become essential to certain developing specifications in the 3GPP LTE, SAE project. We have agreed to make available a non-exclusive patent license under fair, reasonable and non-discriminatory terms and conditions, with compensation, or FRAND, to 3GPP members desiring to implement the technical specifications identified by us. We believe that we are positioned to license our essential security patents to 3GPP members as they move into 4G.

We believe that the market opportunity for our software and technology solutions is large and expanding as secure domain names are now an integral part of securing the next generation 4G/LTE Advanced wireless networks and M2M communications in areas including Smart City, Connected Car and Connected Home. We also believe that all 4G/LTE Advanced mobile devices will require unique secure domain names and become part of a secure domain name registry.

We intend to license our patent portfolio, technology and software, including our secure domain name registry service, to domain infrastructure providers, communication service providers as well as to system integrators. We intend to seek further license of our technology, including our GABRIEL Connection Technology™ to enterprise customers, developers and original equipment manufacturers, or OEMs, of chips, servers, smart phones, tablets, e-Readers, laptops, net books and other devices, within the IP-telephony, mobility, fixed-mobile convergence and unified communications markets including 4G/LTE. We have published our royalty rates and guidelines on our website. All forward moving licenses have adhered to these guidelines and have met or exceeded these rates and we will use these rates and guidelines in all future license negotiations.

Our software and technology solutions, including our Secure Domain Name Registry and GABRIEL Connection Technology™, are designed to facilitate secure communications and provide the security platform required by next-generation Internet-based applications such as instant messaging, or IM, voice over Internet protocol, or VoIP, mobile services, streaming video, file transfer, remote desktop and, or M2M communications. Our technology generates secure connections on a “zero-click” or “single-click” basis, significantly simplifying the deployment of secure real-time communication solutions by eliminating the need for end-users to enter any encryption information.

Our product GABRIEL Secure Communication Platform™, unlike other collaboration and communication products and services on the market today, does not require access to user’s confidential data and minimizes the threat of hacking and data mining. It enables individuals and organizations to maintain complete ownership and control over their personal and confidential data, secured within their own private network, while enabling authorized secure encrypted access from anywhere at any time. Our GABRIEL Collaboration Suite™ is a set of applications that run on top of our GABRIEL Secure Communication Platform™. It enables seamless and secure cross-platform communications between user’s devices that have our software installed. Our GABRIEL Collaboration Suite™ is available for download and free trial, for Android, iOS, Windows, Linux and Mac OS X platforms, at <http://www.gabrielsecure.com/>. We continue to enhance our products and add new functionality to our products. We will provide updates to new and existing customers as they are released to the general public.

We have signed Patent License Agreements with Avaya Inc., Aastra USA, Inc., Microsoft Corporation, Mitel Networks Corporation, NEC Corporation and NEC Corporation of America, Siemens Enterprise Communications GmbH & Co. KG, and Siemens Enterprise Communications Inc. to license certain of our patents, for a one-time payment and/or an ongoing royalty for all future sales through the expiration of the licensed patents with respect to certain current and future IP-encrypted products. We have engaged IPVALUE Management Inc. to assist us in commercializing our portfolio of patents on securing real-time communications over the Internet. Under the multi-year agreement, IPVALUE will originate and assist us with negotiating transactions related to patent licensing worldwide with respect to certain third parties.

Our employees include the core development team behind our patent portfolio, technology and software. This team has worked together for over ten years and is the same team that invented and developed this technology while working at Leidos, is a FORTUNE 500® scientific, engineering and technology applications company that uses its deep domain knowledge to solve problems of vital importance to the nation and the world, in national security, energy and the environment, critical infrastructure and health. The team has continued its research and development work started at Leidos, and expanded the set of patents we acquired in 2006 from Leidos, into a larger portfolio with approximately 185 U.S. and Foreign patents, patent validations and pending applications. This portfolio now serves as the foundation of our licensing business and planned service offerings and is expected to generate the majority of

our future revenue in license fees and royalties. We intend to continue our research and development efforts to further strengthen and expand our patent portfolio. See – Operations – Research and Development Expenses for a description of our research and development expenses for the past three fiscal years discussed below.

We continue using an outsourced and leveraged model to maintain efficiency and manage costs as we grow our licensing business by, for example, offering incentives to early licensing targets or asserting our rights for use of our patents. We also intend to expand our design pilot in participation with leading 4G/LTE companies (domain infrastructure providers, chipset manufacturers, service providers, and others) and build our secure domain name registry.

Developments in the Year Ended December 31, 2017

Litigation

We have eleven intellectual property infringement lawsuits pending in the United States District Court for the Eastern District of Texas, Tyler Division, and United States Court of Appeals for the Federal Circuit (“USCAFC”).

VirnetX Inc. v. Apple, Inc. (Case 6:12-CV-00855-LED)

On March 30, 2015, the United States Court for the Eastern District of Texas, Tyler Division, issued an order finding substantial overlap between the remanded portions of the Civil Action Case 6:10-CV-00417-LED (VirnetX vs. Cisco et. al.), and the ongoing Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case. The jury trial in this case was held on January 25, 2016. On February 4, 2016, a jury in the United States Court for the Eastern District of Texas, Tyler Division, awarded us \$625.6 million in a verdict against Apple Inc. for infringing four of our US patents, marking it the second time a federal jury has found Apple liable for infringing VirnetX’s patented technology. The verdict includes royalties awarded to us based on an earlier patent infringement finding (**Case 6:10-CV-00417-LED**) against Apple. The jury found that Apple’s modified VPN On-Demand, iMessage and FaceTime services infringed VirnetX’s patents and that Apple’s infringement was willful. In addition to determining the royalty owed by Apple for its prior infringement, this verdict also includes an award based on the jury’s finding that Apple’s modified VPN On Demand, iMessage and FaceTime services have continued to infringe VirnetX’s patents. The post-trial hearing was held on May 25, 2016 in the United States Court for the Eastern District of Texas, Texarkana Division. On July 29, 2016, the court issued a new order, vacating its previous orders consolidating the cases (Case No. 6:10-cv-417, Docket No. 878 (“Apple I case”); Case No. 6:12-cv-855, Docket No. 220 (“Apple II case”)), ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II case will be retried after Apple I case. Events and developments subsequent to the order from the court are described to support Apple I and Apple II matters.

VirnetX Inc. v. Cisco Systems, Inc. et al. (Case 6:10-CV-00417-LED) (“Apple I”)

On August 11, 2010, we initiated a lawsuit by filing a complaint against Aastra USA, Inc. (“Aastra”), Apple, Cisco Systems, Inc. (“Cisco”), and NEC Corporation (“NEC”) in the United States District Court for the Eastern District of Texas, Tyler Division, pursuant to which we alleged that these parties infringe on certain of our patents. We sought damages and injunctive relief. Aastra and NEC agreed to sign license agreements with us and we agreed to drop all the accusations of infringement against them. At the pre-trial hearing, the judge decided to conduct separate jury trial for each defendant, and try only the case against Apple on the scheduled trial date. The jury trial of our case against Cisco was held on March 4, 2013. The jury in our case against Cisco came back with a verdict of non-infringement also determined that all our patents-in-suit patents are not invalid. Our motions for a new trial and Cisco’s infringement of certain VirnetX patents were denied and the case against Cisco was closed.

The jury trial of our case against Apple was held on October 31, 2012. On November 6, 2012, a jury in the United States Court for the Eastern District of Texas, Tyler Division, awarded us over \$368 million in a verdict against Apple for infringing four of our patents. On February 26, 2013, the court issued its Memorandum Opinion and Order regarding post-trial motions resulting from the prior jury verdict denying Apple’s motion to reduce the damages awarded by the jury for past infringement. The Court further denied Apple’s request for a new trial on the liability and damages portions of the verdict and granted our motions for pre-judgment interest, post-judgment interest, and post-verdict damages to date. The Court ordered that Apple pay \$34 thousand in daily interest up to final judgment

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and \$330 thousand in daily damages for infringement up to final judgment for certain Apple devices included in the verdict. The Court denied our request for a permanent injunction and severed the future infringement portion into its own separate proceedings under Case 6:13-CV-00211-LED.

On July 3, 2013, Apple filed an appeal of the judgment dated February 27, 2013 and order dated June 4, 2013 denying Apple's motion to alter or amend the judgment to the USCAFC. On September 16, 2014, USCAFC issued their opinion, affirming the jury's finding that all 4 of our patents are valid, confirming the jury's finding of infringement of VPN on Demand under many of the asserted claims of our '135 and '151 patents, and confirming the district's court's decision to allow evidence concerning our licenses and royalty rates in connection with the determination of damages. In its opinion, the USCAFC also vacated the jury's damages award and the district court's claim construction with respect to parts of our '504 and '211 patents and remanded the damages award and determination of infringement with respect to FaceTime –for further proceedings consistent with its opinion. On October 16, 2014, we filed a petition with the USCAFC, requesting a rehearing and rehearing en banc of the Federal Circuit's September 14, 2014, decision concerning VirnetX's litigation against Apple Inc. On December 16, 2014, USCAFC denied our petition requesting a rehearing and rehearing en banc of the Federal Circuit's September 14, 2014, decision and remanded the case back to the Eastern District of Texas, Tyler Division, for further proceedings consistent with its opinion. On February 25, 2015, USCAFC granted Apple's motions to lift stay of proceedings and vacate Case 6:13-CV-00211-LED. On March 30, 2015, the court issued an order finding substantial overlap between the remanded portions of this case and the ongoing Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case.

On July 29, 2016, the court issued a new order, vacating its previous orders consolidating the cases Apple I case and Apple II case, ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II will be retried after Apple I case. The jury trial in this case was held on September 26, 2016. On September 30, 2016, a Jury in the United States Court for the Eastern District of Texas, Tyler Division, in the case VirnetX Inc., et al. v. Apple Inc., No. Apple I, has awarded VirnetX \$302.4 million in a verdict against Apple for infringing four VirnetX patents, marking the third time a federal jury has found Apple liable for infringing VirnetX's patented technology.

The verdict includes royalties awarded to VirnetX, for unresolved issues in the Apple I case, remanded back from the USCAFC, related to (1) damages owed to VirnetX for infringement by Apple's original VPN-on-Demand (VOD) and (2) the alleged infringement by Apple's original FaceTime product, under the new claim construction of "secure communication link" pertaining to the '504 and '211 patents by the USCAFC, and the damages associated with that infringement. The hearing on all the post-trial motions was held on November 22, 2016.

On September 29, 2017, the United States District Court for the Eastern District of Texas, Tyler Division, entered Final Judgement and issued its Memorandum Opinion and Order regarding post-trial motions resulting from the prior \$302.4 million jury verdict for VirnetX in the Apple I case.

In the Order, the Court denied all of Apple's post-trial motions including motion for judgment as a matter of law of non-infringement, motion for judgment as a matter of law on damages, motion for a new trial on infringement, and motion for a new trial on damages. The Court granted all VirnetX's post-trial motions including motion for willful infringement and enhanced the royalty rate during the willfulness period by 50 percent, from \$1.20 to \$1.80 per device, awarding VirnetX, enhanced damages in the amount of \$41.3 million against Apple thereby, granting VirnetX a total sum of \$343.7 million in pre-interest damages. The Court also awarded costs, certain attorneys' fees, and prejudgment interest to VirnetX, and directed the parties to meet and confer regarding these amounts. On October 13, 2017, having met and conferred and having reached agreements on all amounts, parties jointly filed a motion asking the Court to grant VirnetX an additional sum in the amount of \$96 million in agreed Bill of Costs, Attorneys' Fees, and Prejudgment Interest. The Final Judgement is only subject to appeal stemming from new issues unresolved in the Apple I case, remanded back from the United States Court of Appeals for the Federal Circuit. The total Final Judgement amount including Jury Verdict, Willful Infringement, Interest, Costs and Attorney Fees is \$439.7 million.

On October 27, 2017 Apple filed its notice of appeal of the Final Judgment entered on September 29, 2017 to the United States Court of Appeals for the Federal Circuit. This case has now been closed and events and developments subsequent to the notice of appeal are described below under **VirnetX Inc. v. Cisco Systems, Inc. (USCAFC Case 18-1197-CB) (Appeal of Apple I Case)**.

VirnetX Inc. v. Apple, Inc. (Case 6:12-CV-00855-LED) (“Apple II”)

On November 6, 2012, we filed a complaint against Apple in the United States District Court for the Eastern District of Texas, Tyler Division for willfully infringing four of our patents, U.S. Patent Nos. 6,502,135, 7,418,504, 7,921,211 and 7,490,151, and seeking both an unspecified amount of damages and injunctive relief. The accused products include the iPhone 5, iPod Touch 5th Generation, iPad 4th Generation, iPad mini, and the latest Macintosh computers. Due to their release dates, these products were not included in the previous lawsuit that concluded with a Jury verdict on November 6, 2012 that was subsequently upheld by the United States District Court for the Eastern District of Texas, Tyler Division, on February 26, 2013. On July 1, 2013, we filed a consolidated and amended complaint to include U.S. Patent No. 8,051,181 and consolidate Civil Action No. 6:11-cv-00563-LED. On August 27, 2013, we filed an amended complaint including allegations of willful infringement related to U.S. Patent No. 8,504,697 seeking both damages and injunctive relief. The Markman hearing in this case was held on May 20, 2014 and on August 8, 2014, issued its Markman Order, denying Apple’s motion for summary judgment of indefiniteness, in which Apple alleged that some of the disputed claims terms in the patents asserted by us were invalid for indefiniteness. In a separate order, the court granted in part and denied in part our motion for partial summary judgment on Apple’s invalidity counterclaims, precluding Apple from asserting invalidity as a defense against infringement of the claims that were tried before a jury in our prior litigation against Apple (VirnetX vs. Cisco et. al., Case 6:10-CV-00417-LED). The jury trial in this case was scheduled for October 13, 2015. On March 30, 2015, the court issued an order finding substantial overlap between this case and the remanded portions of Case 6:10-CV-00417-LED (VirnetX vs. Cisco et. al.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case. On July 29, 2016, the court issued a new order, vacating its previous orders consolidating the cases Apple I case and Apple II case, ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II will be retried after Apple I case.

On September 29, 2017, the Court issued an order denying Apple’s Motion to Stay. The Court ordered the parties to meet and confer and file a joint motion with a proposed trial date by October 13, 2017. The parties have met, conferred and filed a joint motion on the proposed trial dates. On November 9, 2017, the court issued its order setting this case for jury selection on April 2, 2018 in Tyler, Texas.

On January 5, 2018, Apple filed a Petition for Writ of Mandamus with the USCAFC requesting the court to stay the upcoming limited retrial of the Apple II pending the USCAFC’s decision in related consolidated appeal VirnetX Inc. v. Apple Inc., Cases 2017-1591. On February 22, 2018, the USCAFC issued its order denying Apple’s Petition for Writ of Mandamus. The Apple II case is proceeding on schedule for jury selection on April 2, 2018 per the district court’s order.

VirnetX Inc. v. Cisco Systems, Inc. (USCAFC Case 18-1197-CB) (Appeal of Apple I Case)

On October 27, 2017 Apple filed its notice of appeal of the Final Judgment entered on September 29, 2017 to the United States Court of Appeals for the Federal Circuit.

On January 5, 2018, Apple filed a motion requesting a stay of the briefing schedule in this appeal pending this court’s decision in related consolidated appeal VirnetX Inc. v. Apple Inc., Cases 2017-1591. On January 24, 2018, USCAFC denied Apple’s motion requesting a stay of the briefing schedule and ordered Apple to file its opening brief no later than March 19, 2018.

VirnetX Inc. v. Apple, Inc. (Case 15-1934)

On July 10, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the United States Patent and Trademark Office, Patent Trial and Appeal Board (“PTAB”) in IPR2014-00237 and IPR2014-00238, related to U.S. Patent No. 8,504,697. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on the grounds discussed in IPR2014-00238. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-1211)

On September 28, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2014-00403 and IPR2014-00404 and on October 22, 2015 for IPR2014-00481 and IPR2014-00482 involving our U.S. Patent Nos. 7,188,180, and 7,987,274. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on the grounds discussed in IPR2014-00403 and IPR2014-00481. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-1480)

On November 30, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in inter-partes reexamination no. 95/001,949 related to U.S. Patent No. 8,051,181. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on certain grounds. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-119)

On March 4, 2016, we filed a petition for writ of mandamus with the USCAFC, requesting the USCAFC's intervention to revoke the PTAB's decision joining Apple to IPR2015-01046 and IPR2015-01047, related to U.S. Patent Nos. 6,502,135 and 7,490,151. On March 18, 2016, the USCAFC denied the petition without prejudice to us raising the arguments on appeal after the PTAB's final decisions. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 17-1131)

On October 31, 2016, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2015-00810 and IPR2015-00812, on November 9, 2016 for IPR2015-00811, and on November 28, 2016 for IPR2015-00866, IPR2015-00868, IPR2015-00870 and IPR2015-00871 involving our U.S. Patent Nos. 8,868,705, 8,850,009, 8,458,341, 8,516,131, and 8,560,705. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral argument were held on March 5, 2018. We are awaiting the courts ruling in this matter.

VirnetX Inc. v. The Mangrove Partners (Case 17-1368)

On December 16, 2016, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2015-01046, and on December 20, 2016 for IPR2015-1047, involving our U.S. Patent Nos. 6,502,135, and 7,490,151. These appeals also involve Apple, Inc. and one of them involves Black Swamp IP, LLC. On April 27, 2017, the USCAFC stayed these appeals pending the USCAFC's en banc decision in *Wi-Fi One, LLC v. Broadcom Corporation*, No. 2015-1944. The stay was lifted on January 31, 2018, and briefing is now ongoing.

VirnetX Inc. v. Apple Inc., Cisco Systems, Inc. (Case 17-1591)

On February 7, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in inter-partes reexamination nos. 95/001,788, 95/001,789, and 95/001,856 related to our U.S. Patent Nos. 7,921,211 and 7,418,504. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral arguments have not yet been scheduled.

VirnetX Inc. v. Apple Inc. (Case 17-2490)

On August 23, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2016-00331 and IPR2016-00332 involving our U.S. Patent No. 8,504,696. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral arguments have not yet been scheduled.

In re VirnetX Inc. (Case 17-2593)

On September 22, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2016-00693 and IPR2016-00957 involving our U.S. Patent Nos. 7,418,504 and 7,921,211. These appeals have been consolidated. The briefing in these appeals is ongoing. The entity that initiated the IPRs, Black Swamp IP, LLC, indicated on October 18, 2017, that it would not participate in the appeals. On November 27, 2017, the United States Patent and Trademark Office indicated that it would intervene in the appeals. On January 19, 2018, the USCAFC stayed these appeals pending the USCAFC's decision in Case 17-1591.

One or more potential intellectual property infringement claims may also be available to us against certain other companies who have the resources to defend against any such claims. Although we believe these potential claims are worth pursuing, commencing a lawsuit can be expensive and time-consuming, and there is no assurance that we will prevail on such potential claims. In addition, bringing a lawsuit may lead to potential counterclaims which may preclude our ability to commercialize our initial products, which are currently in development. Currently, we are not a party to any other pending legal proceedings, and are not aware of any proceeding threatened or contemplated against us by any governmental authority or other party.

Commitments and Related Party Transactions

We lease our offices under an operating lease with a third party expiring in October 2019. We recognize rent expense on a straight-line basis over the term of the lease.

We lease the use of an aircraft from K2 Investment Fund LLC (“LLC”) for business travel for employees of the Company. We incurred approximately \$1,240, \$772, and \$593 in rental fees and reimbursements to the LLC during the years ended December 31, 2017, 2016 and 2015, respectively. Our Chief Executive Officer and Chief Administrative Officer are the managing partners of the LLC and control the equity interests of the LLC. On January 31, 2015, we entered into a 12-month non-exclusive lease with the LLC for use of the plane at a rate of \$8 per flight hour, with no minimum usage requirement. The agreement contains other terms and conditions normal in such transactions and can be cancelled by either us or the LLC with 30 days’ notice. The lease renews on an annual basis unless terminated by the lessor or lessee. Neither party has exercised their termination rights.

Critical Accounting Policies

The preparation of financial statements in conformity with accounting principles generally accepted in the United States (“GAAP”) requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reported period. The critical accounting policies we employ in the preparation of our consolidated financial statements are those which involve impairment of long-lived assets, income taxes, fair value of financial instruments and stock-based compensation.

Basis of Consolidation

The consolidated financial statements include the accounts of VirnetX Holding Corporation and our wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. GAAP requires us to make estimates and assumptions that affect the amounts reported and disclosed in the financial statements and the accompanying notes. Actual results could differ materially from these estimates. On an ongoing basis, we evaluate our estimates, including those related to the fair values of financial instruments, fair values of stock-based awards, income taxes, and derivative liabilities, among others. We base our estimates on historical experience and on various other assumptions that are believed to be reasonable, the results of which form the basis for making judgments about the carrying values of assets and liabilities.

Revenue Recognition (see New Accounting Pronouncements - ASU No. 2014-09, Revenue from Contracts with Customers)

We derive our revenue from patent licensing. The timing and amount of revenue recognized from each licensee depends upon a variety of factors, including the specific terms of each agreement and the nature of the deliverables and obligations. Such agreements may be complex and include multiple elements. These agreements may include, without limitation, elements related to the settlement of past patent infringement liabilities, up-front and non-refundable license fees for the use of patents, patent licensing royalties on covered products sold by licensees, and the compensation structure and ownership of intellectual property rights associated with contractual technology development arrangements. Licensing agreements are accounted for under the Financial Accounting Standards Board (“FASB”) revenue recognition guidance, “Revenue Arrangements with Multiple Deliverables.” This guidance requires consideration to be allocated to each element of an agreement that has stand-alone value using the relative fair value method. In other circumstances, such as those agreements involving consideration for past and expected future patent royalty obligations, after consideration of the particular facts and circumstances, the appropriate recording of revenue between periods may require the use of judgment. In all cases, revenue is only recognized after all the following criteria are met: (1) written agreements have been executed; (2) delivery of technology or intellectual property rights has occurred or services have been rendered; (3) fees are fixed or determinable; and (4) collectability of fees is reasonably assured.

Patent License Agreements: Upon signing a patent license agreement, including licenses entered upon settlement of litigation, we provide the licensee permission to use our patented technology in specific applications. We account for

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patent license agreements in accordance with the guidance for revenue recognition for arrangements with multiple deliverables, with amounts allocated to each element based on their fair values. We have elected to utilize the leased-based model for revenue recognition with revenue being recognized over the expected period of benefit to the licensee. Under our patent license agreements, we do or expect to typically receive one or a combination of the following forms of payment as consideration for permitting our licensees to use our patented inventions in specific applications and products:

- *Consideration for Past Sales:* Consideration related to a licensee’s product sales from prior periods may result from a negotiated agreement with a licensee that utilized our patented technology prior to signing a patent license agreement with us or from the resolution of a litigation, disagreement or arbitration with a licensee over the specific terms of an existing license agreement. We may also receive royalty for past sales in connection with the settlement of patent litigation where there was no prior patent license agreement. These amounts are negotiated, typically based upon application of a royalty rate to historical sales prior to the execution of the license agreement. In each of these cases, because delivery has occurred, we record the consideration as revenue when we have obtained a signed agreement, identified a fixed or determinable price, and determined that collectability is reasonably assured.
- *Current Royalty Payments:* Ongoing royalty payments cover a licensee’s obligations to us related to its sales of covered products in the current contractual reporting period. Licensees that owe these current royalty payments are obligated to provide us with quarterly or semi-annual royalty reports that summarize their sales of covered products and their related royalty obligations to us. We expect to receive these royalty reports subsequent to the period in which our licensees’ underlying sales occurred. As a result, it is impractical for us to recognize revenue in the period in which the underlying sales occur, and, in most cases, we will recognize revenue in the period in which the royalty report is received and other revenue recognition criteria are met due to the fact that without royalty reports from our licensees, our visibility into our licensees’ sales is limited.
- *Non-Refundable Up-Front Fees and Minimum Fee Contracts:* For licenses that provide for non-refundable up-front or fixed minimum fees over their term, for which we have no future obligations or performance requirements, revenue is generally recognized over the license term. For licenses that provide for fees that are not fixed or determinable, including licenses that provide for extended payment terms and/or payment of a significant portion of the fee after expiration of the license or more than 12 months after delivery, the fees are generally presumed not to be fixed or determinable, and revenue is deferred and recognized as earned, but generally not in advance of collection.
- *Non-Royalty Elements:* Elements that are not related to royalty revenue in nature, such as settlement fees, expense reimbursement, and damages, if any, are recorded as gain from settlement which is reflected as a separate line item within the operating expenses section in the consolidated statements of operations.

Deferred revenue

In August 2013, we began receiving annual payments on a contract that required payment to us over 4 years of \$10,000 (“August 2013 Contract Settlement”). From the inception of that license to December 31, 2017, we received cash totaling \$10,000, all of which is non-refundable. We recognized \$1,500, \$1,500 and \$1,500 of revenue related to the August 2013 Contract Settlement during the years ended December 31, 2017, 2016 and 2015, respectively.

Activity under the August 2013 Contract Settlement was as follows (in thousands):

	2017	2016	2015
Deferred Revenue, beginning of year	\$ 4,000	\$ 3,000	\$ 2,000
Payment received	—	2,500	2,500
Less: Amount amortized as revenue	1,500	1,500	1,500
Deferred Revenue, end of year	<u>\$ 2,500</u>	<u>\$ 4,000</u>	<u>\$ 3,000</u>

Royalty Expense

Royalty expense for the years ended December 31, 2017, 2016 and 2015 was \$0, \$884 and \$5,265, respectively, and was a result of our royalty agreement with Leidos. The agreement provides for revenue sharing and legal

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reimbursements related to attorney time and expenses incurred by Leidos during discovery and other aspects of litigation involving the defense of our patents which have been resolved.

Earnings Per Share

Basic earnings per share are computed by dividing earnings available to common stockholders by the weighted average number of outstanding common shares during the period. Diluted earnings per share are computed by dividing net income by the weighted average number of shares outstanding during the period increased to include the number of additional shares of common stock that would have been outstanding if the potentially dilutive securities had been issued. During the years ended 2017, 2016 and 2015 we incurred losses. Therefore, the effects of any common stock equivalent were anti-dilutive during those periods.

Concentration of Credit Risk and Other Risks and Uncertainties

Our cash and cash equivalents are primarily maintained at two major financial institutions in the United States. A portion of those balances are insured by the Federal Deposit Insurance Corporation. During the year ended December 31, 2017, and 2016 we had, at times, funds which were uninsured. We do not believe that we are subject to any unusual financial risk beyond the normal risk associated with commercial banking relationships with major financial institutions. We have not experienced any losses on our deposits of cash and cash equivalents.

Derivative Instruments

Our Series I Warrants contained an anti-dilution provision which prevented them from being considered indexed to our stock. As a result, the warrants were required to be accounted for as derivative instruments during 2015. The remaining balance of Series 1 Warrants expired during the year ended December 31, 2015.

We recognize derivative instruments as either assets or liabilities on the accompanying Consolidated Balance Sheets at fair value. We record changes in the fair value (i.e., gains or losses) of the derivatives in the accompanying Consolidated Statements of Operations.

Impairment of Long-Lived Assets

We identify and record impairment losses on long-lived assets used in operations when events and changes in circumstances indicate that the carrying amount of an asset might not be recoverable, but not less than annually. Recoverability is measured by comparison of the anticipated future net undiscounted cash flows to the related assets' carrying value. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the projected discounted future net cash flows arising from the asset.

Income Taxes

We account for income taxes using the asset and liability method. The asset and liability method require the recognition of deferred tax assets and liabilities for expected future tax consequences of temporary differences that currently exist between the tax basis and financial reporting basis of our assets and liabilities. We calculate current and deferred tax provisions based on estimates and assumptions that could differ from actual results reflected on the income tax returns filed during the following years. Adjustments based on filed returns are recorded when identified in the subsequent years. The effect on deferred taxes for a change in tax rates is recognized in income in the period that the tax rate change is enacted. In assessing our deferred tax assets, we consider whether it is more likely than not that all or some portion of the deferred tax assets will not be realized.

A valuation allowance is provided for deferred income tax assets when, in our judgment, based upon currently available information and other factors, it is more likely than not that all or a portion of such deferred income tax assets will not be realized. The determination of the need for a valuation allowance is based on an on-going evaluation of current information including, among other things, historical operating results, estimates of future earnings in different taxing jurisdictions and the expected timing of the reversals of temporary differences. We believe the determination to record a valuation allowance to reduce a deferred income tax asset is a significant accounting estimate because it is based, among other things, on an estimate of future taxable income in the United States and certain other jurisdictions, which is susceptible to change and may or may not occur, and because the impact of adjusting a valuation allowance may be material. In determining when to release the valuation allowance established

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against our net deferred income tax assets, we consider all available evidence, both positive and negative. Consistent with our policy, and because of our history of operating losses, we do not currently recognize the benefit of all of our deferred tax assets, including tax loss carry forwards, that may be used to offset future taxable income. We continually assess our ability to generate sufficient taxable income during future periods in which our deferred tax assets may be realized. If and when we believe it is more likely than not that we will recover our deferred tax assets, we will reverse the valuation allowance as an income tax benefit in our statements of operations.

We account for our uncertain tax positions in accordance with U.S. GAAP. The U.S. GAAP method of accounting for uncertain tax positions utilizes a two-step approach to evaluate tax positions. Step one, recognition, requires evaluation of the tax position to determine if based solely on technical merits it is more likely than not to be sustained upon examination. Step two, measurement, is addressed only if a position is more likely than not to be sustained. In step two, the tax benefit is measured as the largest amount of benefit, determined on a cumulative probability basis, which is more likely than not to be realized upon ultimate settlement with tax authorities. If a position does not meet the more likely than not threshold for recognition in step one, no benefit is recorded until the first subsequent period in which the more likely than not standard is met, the issue is resolved with the taxing authority, or the statute of limitations expires. Positions previously recognized are derecognized when we subsequently determine the position no longer is more likely than not to be sustained. Evaluation of tax positions, their technical merits, and measurements using cumulative probability are highly subjective management estimates. Actual results could differ materially from these estimates.

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act (the "Act"). The Act amends the Internal Revenue Code to reduce tax rates and modify policies, credits, and deductions for individuals and businesses. For businesses, the Act reduces the corporate federal tax rate from a maximum of 35% to a 21% rate. The rate reduction will be taking effect on January 1, 2018. Therefore, we applied the tax rate of 21% to the ending balance of federal deferred tax assets, but because we provided a full valuation allowance against our net deferred tax assets, no tax impact is recognized due to the tax rate change.

The Act changes the worldwide territorial tax system. Therefore, the deemed repatriation tax applies to undistributed earnings of certain non-U.S. subsidiaries. The company has no deemed repatriation tax liability because its foreign subsidiary's accumulated earnings are negative. We also assess the tax impact of the Act for 2018 and future years and do not believe there is a need to change our valuation allowance position as of December 31, 2017.

Stock-based Compensation

We account for stock-based compensation using the fair value recognition method. We recognize these compensation costs net of the applicable forfeiture rate and recognize the compensation costs for only those shares expected to vest on a straight-line basis over the requisite service period of the award, which is generally based the option vesting term of 4 years. Beginning January 1, 2017, we discontinued estimating forfeitures for time-based awards upon adoption of ASU No. 2016-09 – "Compensation – Stock Compensation" discussed below in New Accounting Pronouncements.

In addition, we record stock and options granted to non-employees at fair value of the consideration received or the fair value of the equity investments issued as they vest over the performance period.

Fair Value

We apply fair value accounting to all financial assets and liabilities and non-financial assets and liabilities that are recognized or disclosed at fair value in the financial statements on a recurring basis. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

Level 1 – Quoted prices in active markets for identical assets or liabilities.

Level 2 – Observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 – Inputs that are generally unobservable and typically reflect management's estimate of assumptions that market participants would use in pricing the asset or liability.

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Our financial instruments are stated at amounts that equal, or are intended to approximate, fair value. When we approximate fair value, we utilize market data or assumptions that we believe market participants would use in pricing the financial instrument, including assumptions about risk and inputs to the valuation technique. We use quoted valuation techniques, primarily the income and market approach that maximize the use of observable inputs and minimize the use of unobservable inputs for recurring fair value measurements.

New Accounting Pronouncements

In June 2016, the FASB issued Accounting Standards Update (“ASU”) No. 2016-13, Financial Instruments–Credit Losses (Topic 326) “ASU 2016-13”. The purpose of ASU 2016-13 is to require a financial asset measured at amortized cost basis to be presented at the net amount expected to be collected. Credit losses relating to available-for-sale debt securities should be recorded through an allowance for credit losses. ASU 2016-13 is effective for interim and annual reporting periods beginning after December 15, 2019. We are evaluating the impact this guidance will have on our financial position and statement of operations.

In March 2016, the FASB issued ASU No. 2016-09, Compensation – Stock Compensation (Topic 718) (“ASU 2016-09”), which simplified certain aspects of the accounting for share-based payment transactions, including income taxes, classification of awards and classification in the statement of cash flows. We adopted this ASU in 2017 with the following affects:

- ASU 2016-09 requires excess tax benefits to be recognized regardless of whether the benefit reduces taxes payable. We had zero excess tax benefits recognized for the year ended December 31, 2017.
- Certain prior period amounts were reclassified to conform to the current year’s presentation. None of these reclassifications had an impact on reported net income for any of the periods presented. As a result of the implementation of ASU 2016-09, our consolidated statements of cash flow for the years ended December 31, 2016 and 2015 have been restated to reflect the reclassification of \$93 and \$51, respectively, for payments of taxes on cashless exercise of restricted stock units, previously reported in cash flows from operation activities to the current presentation in cash flows from financing activities.
- The Company has elected to not estimate forfeitures expected to occur to determine the amount of stock-based compensation cost to be recognized in each period. The guidance relating to forfeitures did not have an impact on our accumulated deficit as of December 31, 2017.

In February 2016, FASB issued ASU No. 2016-02, Leases (Topic 842) (“ASU 2016-02”). ASU 2016-02 requires an entity to recognize right-of-use assets and lease liabilities on its balance sheet and disclose key information about leasing arrangements. For public companies, ASU 2016-02 is effective for annual reporting periods beginning after December 15, 2018, including interim periods within that reporting period, and requires a modified retrospective adoption, with early adoption permitted. We are evaluating the impact this guidance will have on our financial position and statement of operations.

In May 2014, the FASB issued ASU No. 2014-09 Revenue from Contracts with Customers (Topic 606) “ASU 2014-09”. ASU 2014-09 was subsequently amended by ASU No. 2016-10 and 2016-12. As amended, Topic 606 supersedes the revenue recognition requirements in Topic 605, Revenue Recognition including most industry-specific revenue recognition guidance throughout the Industry Topics of the Codification. In addition, the amendments create a new Subtopic 340-40, Other Assets and Deferred Costs—Contracts with Customers. In summary, the core principle of Topic 606 is that an entity recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. For a public entity, the amendments to ASU 2014-09 are effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. Earlier application is permitted only as of annual reporting periods beginning after December 15, 2016, including interim reporting periods within that reporting period. We will adopt the new revenue standards in our first quarter of 2018 utilizing the modified retrospective transition method. We expect the adoption of the standard to result in an approximate \$2,500 increase in accumulated deficit and a \$2,500 decrease in deferred revenue in our consolidated balance sheet. The new revenue standards are not expected to have a material impact on the amount and timing of revenue recognized in our consolidated financial statements.

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	<u>2017</u>	<u>2016</u>	<u>2015</u>
Revenue	\$ 1,547	\$ 1,550	\$ 1,555

Revenue generated for the year ended December 31, 2017 was \$1,547 compared to December 31, 2016 of \$1,550, and December 31, 2015 revenue of approximately \$1,555. Revenue for the year ended December 31, 2017 of \$1,547, was largely attributable to the 2013 Contract Settlement described under the heading “Deferred Revenue” above. Under the terms of the 2013 Contract Settlement we were paid annual payments of \$2,500 over the contract period for a total of \$10,000. During 2017, 2016 and 2015 we recognized \$1,500 of revenue for royalties from the 2013 Contract Settlement and \$47, \$50 and \$55 respectively of revenue for royalties from other licensees.

In addition to the settlement discussed above, during 2017, 2016 and 2015 we recognized royalty revenue as part of license agreements entered into with customers during the patent infringement actions (see Note 14 “Litigation”). These revenues relate to payment for use of our patented technology prior to the signing of a license agreement, and royalty payments after the execution of the license agreements. No amounts were allocable to settlement fees, expense reimbursement, damages or any other amounts other than historical and future sales as no such amounts were requested or received.

Research and Development Expenses

	<u>2017</u>	<u>2016</u>	<u>2015</u>
Research and Development	\$ 2,674	\$ 2,499	\$ 2,277

Research and development costs include expenses paid to outside development consultants and compensation-related expenses for our engineering staff. Research and development costs are expensed as incurred.

Our research and development expenses for the year ended December 31, 2017 was \$2,674 compared to December 31, 2016 of \$2,499 and \$2,277 for the year ended December 31, 2015. The increase in 2017 compared to 2016 was primarily due to the increase in staff, wages and bonuses. The increase in 2016 compared to 2015 was primarily due to increase in wages and bonuses paid in 2016 compared to 2015.

Selling, General and Administrative Expenses

	<u>2017</u>	<u>2016</u>	<u>2015</u>
Selling, General and Administrative	\$ 16,194	\$ 26,672	\$ 23,190

Selling, general and administrative expenses include compensation expense for management and administrative personnel, as well as expenses for outside legal, accounting, and consulting services.

Our selling, general and administrative expenses for the year ended December 31, 2017 was \$16,194 compared to December 31, 2016 of \$26,672 and \$23,190 for the year ended December 31, 2015. The decrease in 2017 was primarily due to a decrease in legal fees, mostly related to cases involving the defense of our patents. The increases in 2016 were primarily due to the increase in legal fees. Legal fees represent approximately 23% of general and administrative expenses for 2017 as compared to 49% for 2016 and 42% for 2015.

Within selling, general and administrative expenses, legal fees for the year ended December 31, 2017 were \$3,657 compared to the year ended December 31, 2016 of \$13,002 and \$9,638 for the year ended December 31, 2015.

Also included in selling, general and administrative expense in 2017, 2016 and 2015 is royalty expense of \$0 for the year ended December 31, 2017, \$884 for the year ended December 31, 2016 and \$5,265 for the year ended December 31, 2015, paid to Leidos, in connection with the settlement with Microsoft, Avaya and Mitel et al.

Loss on change in value of derivative liability

	<u>2017</u>	<u>2016</u>	<u>2015</u>
Loss on change in value of derivative liability	\$ —	\$ —	\$ (117)

Our non-cash loss related to the periodic revaluation of our Series I Warrants liability for the year ended December 31, 2015 was \$117. All outstanding Series 1 Warrants expired in March 2015.

Other Income and Expenses

	2017	2016	2015
Interest and Other Income	\$ 46	\$ 69	\$ 68

Interest and other income for the year ended December 31, 2017 was \$46, compared to December 31, 2016 of \$69 and \$68 for the year ended December 31, 2015.

Effective Income Tax Rate

A reconciliation of the United States federal statutory income tax rate to our effective income tax rate is as follows:

	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
United States federal statutory rate	35.00%	35.00%	35.00%
State taxes, net of federal benefit	(0.01)%	(0.31)%	(0.04)%
Valuation allowance	(35.94)%	(35.43)%	(33.36)%
Stock options	—	—	(1.62)%
Prior year adjustment	—	(0.06)%	0.03%
R&D Credit	1.43%	0.66%	0.38%
Warrants	—	—	(0.14)%
Other	(0.50)%	(0.33)%	(0.29)%
Effective income tax rate	<u>(0.02)%</u>	<u>(0.47)%</u>	<u>(0.04)%</u>

In 2017, 2016 and 2015, we had pre-tax losses of \$17, \$28 and \$29 million, respectively, which are available for carry forward to offset future taxable income. We made determinations to provide full valuation allowances for our net deferred tax assets at the end of 2017, 2016 and 2015, including NOL carryforwards generated during the years, based on our evaluation of positive and negative evidence, including our history of operating losses and the uncertainty of generating future taxable income that would enable us to realize our deferred tax.

Liquidity and Capital Resources

For the year ended December 31, 2017, our cash and cash equivalents totaled \$3,135 and our short-term investments totaled \$1,453 compared to \$6,627 and \$9,249, respectively, for the year ended December 31, 2016.

We expect that our cash and cash equivalents and short-term investments as of December 31, 2017, the \$6,821 in proceeds subsequent to December 31, 2017, from sales of our common shares under the ATM, as well as the possibility of future sales of common shares under the ATM and the universal shelf registration statement, described below, will be sufficient to fund our current level of selling, general and administration costs, including legal expenses and provide related working capital for the foreseeable future. Over the longer term, we expect to derive the majority of our future revenue from license fees and royalties associated with our patent portfolio, technology, software and secure domain name registry in the United States and other markets around the world.

Universal Shelf Registration and ATM Offering

In August 2015, we filed a universal shelf registration statement with the SEC enabling us to offer and sell from time to time up to \$100 million of equity, debt or other types of securities. We also entered into an at-the-market (“ATM”) equity offering sales agreement with Cowen & Company, LLC in August 2015, under which we may offer and sell shares of our common stock having an aggregate value of up to \$35 million. We have and expect to use proceeds from this offering for GABRIEL product development and marketing, and general corporate purposes, which may include working capital, capital expenditures, other corporate expenses and acquisitions of complementary products, technologies or businesses. As of December 31, 2017, common stock with an aggregate value of up to \$8,041 remains available for offer and sale under the ATM agreement.

We sold 730,444, 4,760,594 and 835,056 shares of common stock under the ATM program during the years ended December 31, 2017, 2016 and 2015, respectively. The average sales price per common share sold during the year ended December 31, 2017 was \$5.19 and the aggregate proceeds from the sales totaled \$3,790 during the period.

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Sales commissions, fees and other costs associated with the ATM transactions totaled \$113 for 2017. The average sales price per common share sold during the year ended December 31, 2016 was \$4.16 and the aggregate proceeds from the sales totaled \$19,791 during the period. Sales commissions, fees and other costs associated with the ATM transactions totaled \$594 for 2016. The average sales price per common share sold during the year ended December 31, 2015 was \$4.04 and the aggregate proceeds from the sales totaled \$3,378 during the period. Sales commissions, fees and other costs associated with the ATM totaled \$101 for 2015. On March 8, 2018, we amended our August 20, 2015 equity offering sales agreement (“Amended Agreement”) with Cowen and Company, LLC (“Cowen”), whereby the maximum aggregate value of the Company’s common stock (“Shares”) we may offer and sell, from time to time, was increased from \$35,000,000 to \$50,000,000.

Contractual Commitments

	<u>Total</u>	<u>2018</u>	<u>2019</u>
Leases	\$ 102	\$ 56	\$ 46
Total	\$ 102	\$ 56	\$ 46

Off-Balance Sheet Arrangements

As of December 31, 2017, we had no off-balance sheet arrangements.

Item 7A. Quantitative and Qualitative Disclosures about Market Risk

We invest our excess cash primarily in highly liquid debt instruments including corporate, government and federal agency securities. By policy, we limit the amount of credit exposure to any one issuer.

Investments in fixed rate securities carry a degree of interest rate risk. Fixed rate securities may have their fair market value adversely impacted due to a rise in interest rates. Due in part to these factors, our income from investments may decrease in the future.

We considered the historical volatility of short-term interest rates and determined that it was reasonably possible that an adverse change of 100 basis points could be experienced in the near term but would have an immaterial impact in the fair value of our marketable securities as they will be maturing in six months or less.

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Item 8. Financial Statements and Supplementary Data.

FINANCIAL STATEMENTS

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and
Stockholders of VirnetX Holding Corporation

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of VirnetX Holding Corporation (the “Company”) as of December 31, 2017 and 2016, and the related consolidated statements of income, comprehensive loss, stockholders’ equity, and cash flows for each of the years in the three-year period ended December 31, 2017, and the related notes (collectively referred to as the financial statements). In our opinion, the financial statements present fairly, in all material respects, the consolidated financial position of the Company as of December 31, 2017 and 2016, and the consolidated results of their operations and cash flows for each of the years in the three-year period ended December 31, 2017, in conformity with accounting principles generally accepted in the United States of America. We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company’s internal control over financial reporting as of December 31, 2017, based on criteria established in Internal Control—Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 16, 2018, expressed an unqualified opinion.

Basis for Opinion

These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s consolidated financial statements based on our audits. We are a public accounting firm registered with the 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. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Farber Hass Hurley LLP

We have served as the Company’s auditor since 2008.

Chatsworth, California
March 16, 2018

VIRNETX HOLDING CORPORATION
CONSOLIDATED BALANCE SHEETS
(in thousands, except share amounts)

	<u>As of</u> <u>December 31, 2017</u>	<u>As of</u> <u>December 31, 2016</u>
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 3,135	\$ 6,627
Investments available for sale	1,453	9,249
Prepaid expenses and other current assets	591	588
Total current assets	<u>5,179</u>	<u>16,464</u>
Prepaid expenses, non-current	1,989	2,374
Property and equipment, net	7	33
Total assets	<u>\$ 7,175</u>	<u>\$ 18,871</u>
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued liabilities	\$ 414	\$ 1,806
Accrued payroll and related expenses	2,175	1,522
Income tax liability	393	396
Deferred revenue, current portion	1,500	1,500
Total current liabilities	<u>4,482</u>	<u>5,224</u>
Deferred revenue, non-current portion	1,000	2,500
Other liabilities	140	—
Commitments and contingencies (Note 4)	—	—
Total liabilities	<u>5,622</u>	<u>7,724</u>
Stockholders' equity:		
Preferred stock, par value \$0.0001 per share Authorized: 10,000,000 shares at December 31, 2017 and December 31, 2016, Issued and outstanding: 0 shares at December 31, 2017 and December 31, 2016	—	—
Common stock, par value \$0.0001 per share Authorized: 100,000,000 shares at December 31, 2017 and December 31, 2016, Issued and outstanding: 59,051,978 shares and 58,144,888 shares, at December 31, 2017 and December 31, 2016, respectively	6	6
Additional paid-in capital	177,076	169,391
Accumulated deficit	(175,516)	(158,238)
Accumulated other comprehensive loss	(13)	(12)
Total stockholders' equity	<u>1,553</u>	<u>11,147</u>
Total liabilities and stockholders' equity	<u>\$ 7,175</u>	<u>\$ 18,871</u>

See accompanying notes to consolidated financial statements.

VIRNETX HOLDING CORPORATION
CONSOLIDATED STATEMENTS OF OPERATIONS
(in thousands, except share and per share amounts)

	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
Revenue	\$ 1,547	\$ 1,550	\$ 1,555
Operating expense:			
Royalty expense	—	884	5,265
Research and development	2,674	2,499	2,277
Selling, general and administrative expenses	16,194	26,672	23,190
Total operating expense	18,868	30,055	30,732
Loss from operations	(17,321)	(28,505)	(29,177)
Loss on change in value of derivative liability	—	—	(117)
Interest and other income, net	46	69	68
Loss before taxes	(17,275)	(28,436)	(29,226)
Income tax expense	(3)	(133)	(8)
Net loss	\$ (17,278)	\$ (28,569)	\$ (29,234)
Basic and diluted loss per share	\$ (0.30)	\$ (0.51)	\$ (0.56)
Weighted average shares outstanding basic and diluted	58,354,397	55,984,825	52,384,494

VIRNETX HOLDING CORPORATION
CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS
(in thousands)

	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
Net loss	\$ (17,278)	\$ (28,569)	\$ (29,234)
Other comprehensive gain (loss), net of tax:			
Change in equity adjustment from foreign currency translation, net of tax	—	3	(1)
Change in unrealized gain (loss) on investments, net of tax	(1)	4	(3)
Total other comprehensive income (loss), net of tax	(1)	7	(4)
Comprehensive loss	\$ (17,279)	\$ (28,562)	\$ (29,238)

See accompanying notes to consolidated financial statements.

VirnetX Holding Corporation
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(in thousands, except share amounts)

	Common Stock		Additional Paid-in Capital	Accumulated Deficit	Accumulated Other Comprehensive Loss	Total Stockholders' Equity (Deficit)
	Shares	Amount				
Balance at December 31, 2014	<u>51,996,701</u>	<u>\$ 5</u>	<u>\$133,072</u>	<u>\$ (100,435)</u>	<u>\$ (15)</u>	<u>\$ 32,627</u>
Stock issued for cash exercise of warrants at \$3.59 per share, net	120,161		431			431
Stock issued for cash at \$4.04 per share, net	835,056		3,276			3,276
Advisor warrant issuance			121			121
Stock-based compensation			7,275			7,275
Exercise of options	143,100		165			165
Stock issued for vested RSUs	103,817					
Derivative liability			438			438
Comprehensive income:						
Net Loss				(29,234)		(29,234)
Other comprehensive loss, net of tax					(4)	(4)
Comprehensive loss						(29,238)
Balance at December 31, 2015	<u>53,198,835</u>	<u>\$ 5</u>	<u>\$144,778</u>	<u>\$ (129,669)</u>	<u>\$ (19)</u>	<u>\$ 15,095</u>
Stock issued for cash at 3.00-\$5.05 per share, net	4,760,594	1	19,195			19,196
Stock-based compensation			5,398			5,398
Exercise of options	50,357		20			20
Stock issued for vested RSUs	135,102					
Comprehensive income:						
Net Loss				(28,569)		(28,569)
Other comprehensive income, net of tax					7	7
Comprehensive loss						(28,562)
Balance at December 31, 2016	<u>58,144,888</u>	<u>\$ 6</u>	<u>\$169,391</u>	<u>\$ (158,238)</u>	<u>\$ (12)</u>	<u>\$ 11,147</u>
Stock issued for cash at \$4.00 -\$5.69 per share, net	730,444		3,677			3,677
Stock-based compensation			3,986			3,986
Exercise of options	12,500		22			22
Stock issued for vested RSUs	164,146					
Comprehensive income:						
Net Loss				(17,278)		(17,278)
Other comprehensive loss, net of tax					(1)	(1)
Comprehensive loss						(17,279)
Balance at December 31, 2017	<u>59,051,978</u>	<u>\$ 6</u>	<u>\$177,076</u>	<u>\$ (175,516)</u>	<u>\$ (13)</u>	<u>\$ 1,553</u>

See accompanying notes to consolidated financial statements.

VIRNETX HOLDING CORPORATION
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(in thousands)

	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
Cash flows from operating activities:			
Net loss	\$ (17,278)	\$ (28,569)	\$ (29,234)
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation	26	28	26
Amortization of warrant issuance costs	—	30	91
Stock-based compensation	3,986	5,398	7,275
Change in value of derivative liability	—	—	117
Changes in assets and liabilities:			
Prepaid expenses and other current assets	(3)	66	(2)
Prepaid expense – Non-current	385	385	385
Accounts payable	(1,392)	(477)	(1,044)
Other liabilities	140	—	—
Accrued payroll and related expenses	695	232	1,207
Royalty payable	—	—	(6,100)
Related-party payable	—	(11)	(70)
Income tax liability	(3)	(4)	(8)
Deferred revenue	(1,500)	1,000	1,000
Net cash used in operating activities	<u>(14,944)</u>	<u>(21,922)</u>	<u>(26,357)</u>
Cash flows from investing activities:			
Purchase of property and equipment	—	(13)	(10)
Purchase of investments	(946)	(10,527)	(10,673)
Proceeds from sale or maturity of investments	8,741	11,240	23,287
Net cash provided by investing activities	<u>7,795</u>	<u>700</u>	<u>12,604</u>
Cash flows from financing activities: Restate for rule			
Proceeds from exercise of options	22	20	165
Proceeds from exercise of warrants	—	—	431
Proceeds from sale of common stock	3,677	19,196	3,276
Payments of taxes on cashless exercise of restricted stock units	(42)	(93)	(51)
Net cash provided by financing activities	<u>3,657</u>	<u>19,123</u>	<u>3,821</u>
Net decrease in cash and cash equivalents	(3,492)	(2,099)	(9,932)
Cash and cash equivalents, beginning of period	6,627	8,726	18,658
Cash and cash equivalents, end of period	<u>\$ 3,135</u>	<u>\$ 6,627</u>	<u>\$ 8,726</u>
Cash paid for income taxes	<u>\$ 5</u>	<u>\$ 126</u>	<u>\$ 6</u>
Non-cash transactions			
Fair value of warrants issued for services	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 121</u>

See accompanying notes to consolidated financial statements.

VirnetX Holding Corporation
NOTES TO FINANCIAL STATEMENTS
(in thousands except share, per share and per device amounts)

Note 1 – Formation and Business of the Company

VirnetX Holding Corporation, which we refer to as “we”, “us”, “our”, “the Company” or “VirnetX”, is engaged in the business of commercializing a portfolio of patents. We seek to license our technology, including GABRIEL Connection Technology™, to various original equipment manufacturers, or OEMs, that use our technologies in the development and manufacturing of their own products within the IP-telephony, mobility, fixed-mobile convergence and unified communications markets. Prior to 2012 our revenue was limited to an insignificant amount of software royalties pursuant to the terms of a single license agreement. During 2013 and 2012 we had revenues from settlements of patent infringement disputes whereby we received consideration for past sales of licensees that utilized our technology, where there was no prior patent license agreement (see “Revenue Recognition”).

Our portfolio of intellectual property is the foundation of our business model. We currently own approximately 185 total patents and pending applications, including 70 US patents/patent applications and 115 foreign patents/validations/pending applications. Our patent portfolio is primarily focused on securing real-time communications over the Internet, as well as related services such as the establishment and maintenance of a secure domain name registry. Our patented methods also have additional applications in the key areas of device operating systems and network security for Cloud services, M2M communications in areas of Smart City, Connected Car and Connected Home. The subject matter of all our U.S and foreign patents and pending applications relates generally to securing communications over the internet and such covers all our technology and other products. Our issued U.S. and foreign patents expire at various times during the period from 2019 to 2024. Some of our issued patents and pending patent applications were acquired by our principal operating subsidiary; VirnetX, Inc., from Leidos, (f/k/a Science Applications International Corporation or SAIC) in 2006 and we are required to make payments to Leidos, based on cash or certain other values generated from those patents. The amount of such payments depends upon the type of value generated, and certain categories are subject to maximums and other limitations.

Note 2 – Summary of Significant Accounting Policies

The preparation of financial statements in conformity with accounting principles generally accepted in the United States requires us to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reported period. The critical accounting policies we employ in the preparation of our consolidated financial statements are those which involve impairment of long-lived assets, income taxes, fair value of financial instruments and stock-based compensation.

Use of Estimates

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the U.S. (“U.S. GAAP”). In doing so, we have to make estimates and assumptions that affect our reported amounts of assets, liabilities, revenues, and expenses, as well as related disclosure of contingent assets and liabilities. In some cases, we could reasonably have used different accounting policies and estimates. In some cases, changes in the accounting estimates are reasonably likely to occur from period to period. Accordingly, actual results could differ materially from our estimates. To the extent that there are material differences between these estimates and actual results, our financial condition or results of operations will be affected. We base our estimates on past experience and other assumptions that we believe are reasonable under the circumstances, and we evaluate these estimates on an ongoing basis. We refer to accounting estimates of this type as critical accounting policies and estimates, which we discuss further below. We have reviewed our critical accounting policies and estimates with the audit committee of our board of directors.

Basis of Consolidation

The consolidated financial statements include the accounts of VirnetX Holding Corporation and our wholly-owned subsidiaries. All intercompany balances and transactions have been eliminated.

Revenue Recognition (see Note 2 -New Accounting Pronouncements - ASU No. 2014-09, Revenue from Contracts with Customers)

We derive our revenue from patent licensing. The timing and amount of revenue recognized from each licensee depends upon a variety of factors, including the specific terms of each agreement and the nature of the deliverables

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and obligations. Such agreements may be complex and include multiple elements. These agreements may include, without limitation, elements related to the settlement of past patent infringement liabilities, up-front and non-refundable license fees for the use of patents, patent licensing royalties on covered products sold by licensees, and the compensation structure and ownership of intellectual property rights associated with contractual technology development arrangements. Licensing agreements are accounted for under the Financial Accounting Standards Board (“FASB”) revenue recognition guidance, “Revenue Arrangements with Multiple Deliverables.” This guidance requires consideration to be allocated to each element of an agreement that has stand-alone value using the relative fair value method. In other circumstances, such as those agreements involving consideration for past and expected future patent royalty obligations, after consideration of the particular facts and circumstances, the appropriate recording of revenue between periods may require the use of judgment. In all cases, revenue is only recognized after all the following criteria are met: (1) written agreements have been executed; (2) delivery of technology or intellectual property rights has occurred or services have been rendered; (3) fees are fixed or determinable; and (4) collectability of fees is reasonably assured.

Patent License Agreements: Upon signing a patent license agreement, including licenses entered upon settlement of litigation, we provide the licensee permission to use our patented technology in specific applications. We account for patent license agreements in accordance with the guidance for revenue recognition for arrangements with multiple deliverables, with amounts allocated to each element based on their fair values. We have elected to utilize the leased-based model for revenue recognition with revenue being recognized over the expected period of benefit to the licensee. Under our patent license agreements, we do or expect to typically receive one or a combination of the following forms of payment as consideration for permitting our licensees to use our patented inventions in specific applications and products:

- *Consideration for Past Sales:* Consideration related to a licensee’s product sales from prior periods may result from a negotiated agreement with a licensee that utilized our patented technology prior to signing a patent license agreement with us or from the resolution of a litigation, disagreement or arbitration with a licensee over the specific terms of an existing license agreement. We may also receive royalty for past sales in connection with the settlement of patent litigation where there was no prior patent license agreement. These amounts are negotiated, typically based upon application of a royalty rate to historical sales prior to the execution of the license agreement. In each of these cases, because delivery has occurred, we record the consideration as revenue when we have obtained a signed agreement, identified a fixed or determinable price, and determined that collectability is reasonably assured.
- *Current Royalty Payments:* Ongoing royalty payments cover a licensee’s obligations to us related to its sales of covered products in the current contractual reporting period. Licensees that owe these current royalty payments are obligated to provide us with quarterly or semi-annual royalty reports that summarize their sales of covered products and their related royalty obligations to us. We expect to receive these royalty reports subsequent to the period in which our licensees’ underlying sales occurred. As a result, it is impractical for us to recognize revenue in the period in which the underlying sales occur, and, in most cases, we will recognize revenue in the period in which the royalty report is received and other revenue recognition criteria are met due to the fact that without royalty reports from our licensees, our visibility into our licensees’ sales is limited.
- *Non-Refundable Up-Front Fees and Minimum Fee Contracts:* For licenses that provide for non-refundable up-front or fixed minimum fees over their term, for which we have no future obligations or performance requirements, revenue is generally recognized over the license term. For licenses that provide for fees that are not fixed or determinable, including licenses that provide for extended payment terms and/or payment of a significant portion of the fee after expiration of the license or more than 12 months after delivery, the fees are generally presumed not to be fixed or determinable, and revenue is deferred and recognized as earned, but generally not in advance of collection.
- *Non-Royalty Elements:* Elements that are not related to royalty revenue in nature, such as settlement fees, expense reimbursement, and damages, if any, are recorded as gain from settlement which is reflected as a separate line item within the operating expenses section in the consolidated statements of operations.

Deferred Revenue

In August 2013, we began receiving annual payments on a contract that required payment to us over 4 years totaling \$10,000 (“August 2013 Contract Settlement”). As of December 31, 2017, we received cash totaling \$10,000, all of

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which is non-refundable. We recognized \$1,500, \$1,500 and \$1,500 of revenue related to the August 2013 Contract Settlement during the years ended December 31, 2017, 2016 and 2015, respectively.

Activity under the August 2013 Contract Settlement was as follows:

	<u>2017</u>	<u>2016</u>	<u>2015</u>
Deferred Revenue, beginning of year	\$ 4,000	\$ 3,000	\$ 2,000
Payment received	—	2,500	2,500
Less: Amount amortized as revenue	1,500	1,500	1,500
Deferred Revenue, end of year	<u>\$ 2,500</u>	<u>\$ 4,000</u>	<u>\$ 3,000</u>

Royalty Expense

Royalty expense for the years ended December 31, 2017, 2016 and 2015 was \$0, \$884 and \$5,265, respectively and was a result of our royalty agreement with Leidos. The agreement provides for revenue sharing and legal reimbursements related to attorney time and expenses incurred by Leidos during discovery and other aspects of litigation matters that have been resolved.

Cash and Cash Equivalents

We consider all highly liquid investments purchased with original maturities of three months or less at the date of purchase to be cash equivalents. Our cash and cash equivalents are not subject to significant interest rate risk due to the short maturities of these investments.

Prepaid Expenses and Other Current Assets

Prepaid Expense and Other Current Assets at December 31, 2017 includes the current portion of prepaid rent for a facility lease for corporate promotional and marketing purposes. Beginning March 2014, the prepayment totaling \$4,000 is being amortized over the 10-year term of the lease. The unamortized non-current portion of the prepayment is included in Prepaid Expenses-Non-current on the consolidated balance sheet.

Investments

Investments are classified as available-for-sale and are recorded at fair market value. Unrealized gains and losses are reported as other comprehensive income. Realized gains and losses are recorded in income in the period they are realized. Unrealized gains and losses on our investments are included in other comprehensive income. We invest our excess cash primarily in highly liquid debt instruments including corporate, government and federal agency securities, with contractual maturities less than two years. By policy, we limit the amount of credit exposure to any one issuer.

Property and Equipment

Property and equipment are stated at historical cost, less accumulated depreciation and amortization. Depreciation and amortization are computed using the accelerated and straight-line methods over the estimated useful lives of the assets, which range from five to seven years. Repair and maintenance costs are charged to expense as incurred.

Concentration of Credit Risk and Other Risks and Uncertainties

Our cash and cash equivalents are primarily maintained at two major financial institutions in the United States. Deposits held with these financial institutions may exceed the amount of insurance provided on such deposits. A portion of those balances are insured by the Federal Deposit Insurance Corporation, or FDIC. During the year ended December 31, 2017 and 2016, we had, at times, funds that were uninsured. We do not believe that we are subject to any unusual financial risk beyond the normal risk associated with commercial banking relationships. We have not experienced any losses on our deposits of cash and cash equivalents.

Fair Value

The carrying amounts of our financial instruments, including cash equivalents, accounts payable, and accrued liabilities, approximate fair value because of their generally short maturities.

Intangible Assets

We record intangible assets at cost, less accumulated amortization. Amortization of intangible assets is provided over their estimated useful lives, which can range from 3 to 15 years, on either a straight-line basis or as revenue is generated by the assets.

Impairment of Long-Lived Assets

We identify and record impairment losses on long-lived assets used in operations when events and changes in circumstances indicate that the carrying amount of an asset might not be recoverable, but not less than annually. Recoverability is measured by comparison of the anticipated future net undiscounted cash flows to the related assets' carrying value. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the projected discounted future net cash flows arising from the asset.

Research and Development

Research and development costs include expenses paid to outside development consultants and compensation related expenses for our engineering staff. Research and development costs are expensed as incurred.

Income Taxes

We account for income taxes using the asset and liability method. The asset and liability method requires the recognition of deferred tax assets and liabilities for expected future tax consequences of temporary differences that currently exist between the tax basis and financial reporting basis of our assets and liabilities. We calculate current and deferred tax provisions based on estimates and assumptions that could differ from actual results reflected on the income tax returns filed during the following years. Adjustments based on filed returns are recorded when identified in the subsequent years. The effect on deferred taxes for a change in tax rates is recognized in income in the period that the tax rate change is enacted. In assessing our deferred tax assets, we consider whether it is more likely than not that all or some portion of the deferred tax assets will not be realized.

A valuation allowance is provided for deferred income tax assets when, in our judgment, based upon currently available information and other factors, it is more likely than not that all or a portion of such deferred income tax assets will not be realized. The determination of the need for a valuation allowance is based on an on-going evaluation of current information including, among other things, historical operating results, estimates of future earnings in different taxing jurisdictions and the expected timing of the reversals of temporary differences. We believe the determination to record a valuation allowance to reduce a deferred income tax asset is a significant accounting estimate because it is based, among other things, on an estimate of future taxable income in the United States and certain other jurisdictions, which is susceptible to change and may or may not occur, and because the impact of adjusting a valuation allowance may be material. In determining when to release the valuation allowance established against our net deferred income tax assets, we consider all available evidence, both positive and negative. Consistent with our policy, and because of our history of operating losses, we do not currently recognize the benefit of all our deferred tax assets, including tax loss carry forwards, that may be used to offset future taxable income. We continually assess our ability to generate sufficient taxable income during future periods in which our deferred tax assets may be realized. If and when we believe it is more likely than not that we will recover our deferred tax assets, we will reverse the valuation allowance as an income tax benefit in our statements of operations.

We account for our uncertain tax positions in accordance with U.S. GAAP. The purpose of this method is to clarify accounting for uncertain tax positions recognized. The U.S. GAAP method of accounting for uncertain tax positions utilizes a two-step approach to evaluate tax positions. Step one, recognition, requires evaluation of the tax position to determine if based solely on technical merits it is more likely than not to be sustained upon examination. Step two, measurement, is addressed only if a position is more likely than not to be sustained. In step two, the tax benefit is measured as the largest amount of benefit, determined on a cumulative probability basis, which is more likely than not to be realized upon ultimate settlement with tax authorities. If a position does not meet the more likely than not threshold for recognition in step one, no benefit is recorded until the first subsequent period in which the more likely than not standard is met, the issue is resolved with the taxing authority, or the statute of limitations expires. Positions previously recognized are derecognized when we subsequently determine the position no longer is more likely than not to be sustained. Evaluation of tax positions, their technical merits, and measurements using cumulative

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probability are highly subjective management estimates. Actual results could differ materially from these estimates. We include interest and penalties, if any, in income tax expense. During the years ended December 31, 2017, 2016 and 2015, income tax expense included interest and penalties of \$0, \$48 and \$0, respectively.

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act (the "Act"). The Act amends the Internal Revenue Code to reduce tax rates and modify policies, credits, and deductions for individuals and businesses. For businesses, the Act reduces the corporate federal tax rate from a maximum of 35% to a 21% rate. The rate reduction will be taking effect on January 1, 2018. Therefore, we applied the tax rate of 21% to the ending balance of federal deferred tax assets, but because we provided a full valuation allowance against our net deferred tax assets, no tax impact is recognized due to the tax rate change.

The Act changes the worldwide territorial tax system. Therefore, the deemed repatriation tax applies to undistributed earnings of certain non-U.S. subsidiaries. The company has no deemed repatriation tax liability because its foreign subsidiaries accumulated earnings is negative. We also assess the tax impact of the Act for 2018 and future years and do not believe there is a need to change our valuation allowance position as of December 31, 2017.

Derivative Instruments

Our Series I Warrants were accounted for as derivative instruments as a result of an anti-dilution provision which, in accordance with U.S. GAAP, prevented them from being considered indexed to our stock and qualified for an exception to derivative accounting. The balance of our Series I Warrants expired during the year ended December 31, 2015.

We recognize derivative instruments as either assets or liabilities on the accompanying Consolidated Balance Sheets at fair value. We record changes in the fair value (i.e., gains or losses) of the derivatives in the accompanying Consolidated Statements of Operations.

Stock-Based Compensation

We account for stock-based compensation using the fair value recognition method in accordance with U.S. GAAP. We recognize these compensation costs net of the applicable forfeiture rate and recognize the compensation costs for only those shares expected to vest on a straight-line basis over the requisite service period of the award, which is generally the vesting term of 4 years. We estimate the forfeiture rate based on our historical experience if any. See Note 6 - Stock-Based Compensation and New Accounting Pronouncements below for additional information concerning our share-based compensation awards.

In addition, as required we record stock and options granted to non-employees at fair value of the consideration received or the fair value of the equity instruments issued as they vest over the performance period.

Earnings per Share

Basic earnings per share are computed by dividing earnings available to common stockholders by the weighted average number of outstanding common shares during the period. Diluted earnings per share is computed by dividing net income by the weighted average number of shares outstanding during the period increased to include the number of additional shares of common stock that would have been outstanding if the potentially dilutive securities had been issued. During 2017, 2016 and 2015 we incurred losses; therefore, the effect of any common stock equivalent would be anti-dilutive during these periods.

Reclassifications

Certain prior year amounts in the accompanying consolidated financial statements have been reclassified to conform to the current year's presentation.

New Accounting Pronouncements

In June 2016, the FASB issued Accounting Standards Update ("ASU") No. 2016-13, Financial Instruments-Credit Losses (Topic 326) "ASU 2016-13". The purpose of ASU 2016-13 is to require a financial asset measured at amortized cost basis to be presented at the net amount expected to be collected. Credit losses relating to available-for-sale debt securities should be recorded through an allowance for credit losses. ASU 2016-13 is effective for interim and annual reporting periods beginning after December 15, 2019. We are evaluating the impact this guidance will have on our financial position and statement of operations.

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In March 2016, the FASB issued ASU No. 2016-09, Compensation – Stock Compensation (Topic 718) (“ASU 2016-09”), which simplified certain aspects of the accounting for share-based payment transactions, including income taxes, classification of awards and classification in the statement of cash flows. We adopted this ASU in 2017 with the following affects:

- ASU 2016-09 requires excess tax benefits to be recognized regardless of whether the benefit reduces taxes payable. We had zero excess tax benefits recognized for the year ended December 31, 2017.
- Certain prior period amounts were reclassified to conform to the current year’s presentation. None of these reclassifications had an impact on reported net income for any of the periods presented. As a result of the implementation of ASU 2016-09, our consolidated statements of cash flow for the years ended December 31, 2016 and 2015 have been restated to reflect the reclassification of \$93 and \$51, respectively, for payments of taxes on cashless exercise of restricted stock units, previously reported in cash flows from operation activities to the current presentation in cash flows from financing activities.
- The Company has elected to not estimate forfeitures expected to occur to determine the amount of stock-based compensation cost to be recognized in each period. The guidance relating to forfeitures did not have an impact on our accumulated deficit as of December 31, 2017.

In February 2016, FASB issued ASU No. 2016-02, Leases (Topic 842) (“ASU 2016-02”). ASU 2016-02 requires an entity to recognize right-of-use assets and lease liabilities on its balance sheet and disclose key information about leasing arrangements. For public companies, ASU 2016-02 is effective for annual reporting periods beginning after December 15, 2018, including interim periods within that reporting period, and requires a modified retrospective adoption, with early adoption permitted. We are evaluating the impact this guidance will have on our financial position and statement of operations.

In May 2014, the FASB issued ASU No. 2014-09 Revenue from Contracts with Customers (Topic 606) “ASU 2014-09”. ASU 2014-09 was subsequently amended by ASU No. 2016-10 and 2016-12. As amended, Topic 606 supersedes the revenue recognition requirements in Topic 605, Revenue Recognition including most industry-specific revenue recognition guidance throughout the Industry Topics of the Codification. In addition, the amendments create a new Subtopic 340-40, Other Assets and Deferred Costs—Contracts with Customers. In summary, the core principle of Topic 606 is that an entity recognizes revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. For a public entity, the amendments to ASU 2014-09 are effective for annual reporting periods beginning after December 15, 2017, including interim periods within that reporting period. Earlier application is permitted only as of annual reporting periods beginning after December 15, 2016, including interim reporting periods within that reporting period. We will adopt the new revenue standards in our first quarter of 2018 utilizing the modified retrospective transition method. We expect the adoption of the standard to result in an approximate \$2,500 decrease in accumulated deficit and a \$2,500 decrease in deferred revenue in our consolidated balance sheet. The new revenue standards are not expected to have a material impact on the amount and timing of revenue recognized in our consolidated financial statements.

Note 3 – Property and Equipment

Our major classes of property and equipment were as follows:

	December 31	
	2017	2016
Office furniture	\$ 79	\$ 79
Computer equipment	172	172
Total	251	251
Less accumulated depreciation	(244)	(218)
	<u>\$ 7</u>	<u>\$ 33</u>

Depreciation expense for the years ended December 31, 2017, 2016 and 2015 was \$26, \$28 and \$26, respectively.

Note 4 – Commitments, Contingencies and Related Party Transactions

We lease our offices under an operating lease with a third party expiring in October 2019. We recognize rent expense on a straight-line basis over the term of the lease. Rent expense was \$56, for each of the years ended December 31, 2017, 2016 and 2015. Future minimum rents due under the lease total \$56 in 2018, and \$46 in 2019 when the lease expires.

During 2017, 2016 and 2015 we leased the use of an aircraft from K2 Investment Fund LLC (“LLC”) for business travel for employees of the Company. We incurred approximately \$1,240, \$772 and \$593 in rental fees (including fees and other reimbursements) to the LLC during the year ended December 31, 2017, 2016 and 2015, respectively. Our Chief Executive Officer and Chief Administrative Officer are the managing partners of the LLC and control the equity interests of the LLC. On January 31, 2015, we entered into a 12-month non-exclusive lease with the LLC for use of the plane at a rate of \$8 per flight hour, with no minimum usage requirement. The agreement contains other terms and conditions normal in such transactions and can be cancelled by either us or the LLC with 30 days’ notice. The lease renews on an annual basis unless terminated by the lessor or lessee. Neither party has yet exercised their termination rights.

Note 5 – Stock Plan

We have a stock incentive plan for employees and others called the VirnetX Holding Corporation 2013 Equity Incentive Plan (the “Plan”), which has been approved by our stockholders. To the extent that any award should expire, become un-exercisable or is otherwise forfeited, the shares subject to such award will again become available for issuance under the 2013 Plan. The 2013 Plan provides for the granting of stock options and restricted stock purchase rights (“RSU”) to our employees and consultants. Stock options granted under the 2013 Plan may be incentive stock options or nonqualified stock options. Incentive stock options (“ISO”) may only be granted to our employees (including officers and directors). Nonqualified stock options (“NSO”) and stock purchase rights may be granted to our employees and consultants.

The 2013 Plan will expire in 2023. Options may be granted under the 2013 Plan with an exercise price determined by our Board of Directors, or a duly appointed committee thereof, provided, however, that the exercise price of an option granted to any employee shall be not less than 100% of the fair market value at the date of grant in the case of ISO or 85% of the fair market value at the date of grant in the case of an NSO. The exercise price of an ISO or NSO granted to one of our Named Executive Officers shall not be less than 100% fair market value of the shares at the date of grant and the exercise price of an ISO granted to a 10% shareholder shall not be less than 110% of the fair market value of the shares on the date of grant. Stock options granted under the 2013 Plan typically vest over four years and have a 10-year term. All RSUs are considered to be granted at the fair value of our stock on the date of grant because they have no exercise price. RSUs typically vest over four years. At December 31, 2017, there were 2,928,562 shares available for grant under the 2013 Plan.

Note 6 – Stock-Based Compensation

The following tables summarize information about stock-options and RSUs outstanding at December 31, 2017:

Options Outstanding				Options Vested and Exercisable			
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	Number Exercisable	Weighted Average Remaining Contractual Life (Years)	Weighted Average Exercise Price	
\$ 0.24- 1.58	771,045	1.26	\$ 1.16	771,045	1.26	\$ 1.16	
\$ 1.74- 6.95	3,113,396	8.04	4.27	1,134,677	5.86	4.63	
\$ 14.52- 35.25	1,253,625	4.71	23.16	1,223,510	4.67	23.35	
	5,138,066	6.21	\$ 8.41	3,129,233	4.26	\$ 11.09	

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The following tables summarize activity under the Plan for the indicated periods:

	Options			
	Number of Shares	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life (Years)	Aggregate Intrinsic Value
Outstanding at December 31, 2014	4,489,028	\$ 9.33	—	\$ —
Options granted	694,000	4.47	—	—
Options exercised	(143,100)	1.15	—	—
Options cancelled	(40,000)	25.61	—	—
Outstanding at December 31, 2015	4,999,928	\$ 8.76	—	\$ —
Options granted	429,000	4.77	—	—
Options exercised	(50,357)	0.40	—	—
Outstanding at December 31, 2016	5,378,571	\$ 8.52	—	\$ —
Options granted	1,613,500	4.06	—	—
Options exercised	(12,500)	1.74	—	—
Options cancelled	(1,841,505)	4.71	—	—
Outstanding at December 31, 2017	5,138,066	\$ 8.41	6.21	\$ 2,529
Options exercisable at December 31, 2017	3,129,233	\$ 11.09	4.26	\$ 2,271

	RSUs		
	Number of RSUs	Weighted Average Grant Date Fair Value	Aggregate Intrinsic Value
Outstanding at December 31, 2014	310,394	\$ 19.74	\$ —
RSUs granted	162,665	5.57	—
RSUs vested	(113,103)	20.11	—
Outstanding at December 31, 2015	359,956	\$ 13.22	\$ —
RSUs granted	219,331	4.75	—
RSUs vested	(155,852)	15.27	—
Outstanding at December 31, 2016	423,435	\$ 8.08	\$ —
RSUs granted	220,664	3.83	—
RSUs vested	(174,438)	10.47	—
Outstanding at December 31, 2017	469,661	\$ 5.19	\$ —

Intrinsic value is calculated as the difference between the per-share market price of our common stock on the last trading day of 2017, which was \$3.70, and the exercise price of the options. For options exercised, the intrinsic value is the difference between market price and the exercise price on the date of exercise. We received cash proceeds of \$22, \$20 and \$165 from stock options exercised in 2017, 2016 and 2015, respectively. The total intrinsic value of options exercised was \$25, \$91 and \$203 during the years ended December 31, 2017, 2016 and 2015, respectively. For RSUs vested, the intrinsic value is the difference between market price and the vested price on the date of vest. The total intrinsic value of the RSUs vested was zero during the year ended December 31, 2017.

Stock-based compensation expense is included in general and administrative expense for each period as follows:

Stock-Based Compensation by Type of Award	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
Stock options	\$ 2,446	\$ 3,436	\$ 4,939
RSUs	1,540	1,962	2,336
Total stock-based compensation expense	\$ 3,986	\$ 5,398	\$ 7,275

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As of December 31, 2017, there was \$6,086 of unrecognized stock-based compensation expense expected to be recognized related to unvested employee stock options and \$1,767 of unrecognized stock-based compensation expense to be recognized related to unvested RSUs. These costs are expected to be recognized over a weighted-average period of 3.11 and 2.43 years, respectively.

The fair value of each option grant was estimated on the date of grant using the Black-Scholes option pricing model using the following weighted average assumptions:

	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
Expected stock price volatility	84.91%	79.6%	82%
Risk-free interest rate	1.94%	1.85%	2.12%
Expected life term (in years)	6.08 years	6.03 years	6.07 years
Expected dividends	0%	0%	0%

Based on the Black-Scholes option pricing model, the weighted average estimated fair value of employee stock options granted was \$2.93, \$3.25 and \$3.17 per share during the years ended December 31, 2017, 2016 and 2015, respectively.

The expected life was determined using the simplified method outlined in ASC 718, "Compensation - Stock Compensation", taking the average of the vesting term and the contractual term of the option. Expected volatility of the stock options was based upon historical data and other relevant factors, such as the volatility of comparable publicly-traded companies at a similar stage of life cycle. We have not provided an estimate for forfeitures because we have had nominal forfeited options and RSUs and believe that all outstanding options and RSUs at December 31, 2017, will vest. In 2017 we adopted a policy not to estimate forfeitures (see Note 2, New Accounting Pronouncements, ASU No. 2016-09).

Note 7 – Earnings Per Share

Basic earnings per share are based on the weighted average number of shares outstanding for a period. Diluted earnings per share are based upon the weighted average number of shares and potentially dilutive common shares outstanding. Potential common shares outstanding principally include stock options, under our stock plan and warrants. During 2017, 2016 and 2015 we incurred losses; therefore, the effect of any common stock equivalent would be anti-dilutive during those periods.

The table below sets forth the basic and diluted loss per share calculations:

	Year Ended December 31,		
	2017	2016	2015
Net loss	\$ (17,278)	\$ (28,569)	\$ (29,234)
Basic and diluted weighted average number of shares outstanding	58,354	55,985	52,384
Basic and diluted loss per share	\$ (0.30)	\$ (0.51)	\$ (0.56)

Note 8 – Common Stock

Each share of common stock has the right to one vote. The holders of common stock are entitled to receive dividends whenever funds are legally available and when declared by our Board of Directors, subject to the prior rights of holders of all classes of stock outstanding having priority rights as to dividends. Our restated articles of incorporation authorize us to issue up to 100,000,000 shares of \$.0001 par value common stock.

In August 2015, we filed a universal shelf registration statement with the SEC enabling us to offer and sell from time to time up to \$100 million of equity, debt or other types of securities. We also entered into an at-the-market ("ATM") equity offering sales agreement with Cowen & Company, LLC in August 2015, under which we may offer and sell shares of our common stock having an aggregate value of up to \$35 million. We have and expect to use proceeds from this offering for GABRIEL product development and marketing, and general corporate purposes, which may include working capital, capital expenditures, other corporate expenses and acquisitions of complementary products, technologies or businesses. As of December 31, 2017, common stock with an aggregate value of up to \$8,041 remains available for offer and sale under the ATM agreement.

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We sold 730,444, 4,760,594 and 835,056 shares of common stock under the ATM program during the years ended December 31, 2017, 2016 and 2015 respectively. The average sales price per common share sold during the year ended December 31, 2017 was \$5.19 and the aggregate proceeds from the sales totaled \$3,790 during the period. Sales commissions, fees and other costs associated with the ATM transactions totaled \$113 for 2017. The average sales price per common share sold during the year ended December 31, 2016 was \$4.16 and the aggregate proceeds from the sales totaled \$19,791 during the period. Sales commissions, fees and other costs associated with the ATM transactions totaled \$594 for 2016. The average sales price per common share sold during the year ended December 31, 2015 was \$4.04 and the aggregate proceeds from the sales totaled \$3,378 during the period. Sales commissions, fees and other costs associated with the ATM totaled \$101 for 2015 (see Note 15 - Subsequent Events).

Note 9 – Equity Warrants

During the year ended December 31, 2015 we issued warrants (“Advisor Warrants”) for the purchase of 25,000 shares of common stock for \$7 per share, which expire in April 2020. The Advisor Warrants were issued for advisory services provided by a third party. Our Advisor Warrants were recorded at fair value on the issuance date and included in Additional Paid in Capital on our Consolidated Balance Sheet. The Advisor Warrants are exercisable by the holder, in whole or in part, until expiration, and may also be net-share-settled. Terms of the warrant agreement include no registration requirements for the underlying common stock and there are no anti-dilution provisions. The fair value at issuance of the warrants was recorded in Prepaid Expenses and Other Current Assets, and is being amortized over the twelve-month life of the service contract, with the expense included in Selling, General and Administrative Expense in our Consolidated Statements of Operations.

Information about the Advisor Warrants outstanding during the twelve months ended December 31, 2017 follows:

Original Number of Warrants Issued	Exercise Price per Common Share	Exercisable at December 31, 2016	Became Exercisable	Exercised	Terminated / Cancelled / Expired	Exercisable at December 31, 2017	Expiration Date
25,000	\$7.00	25,000	—	—	—	25,000	April 2020

Note 10 – Employee Benefit Plan

We sponsor a defined contribution 401k plan covering substantially all our employees. Our matching contribution to the plan was approximately \$84, \$90 and \$59 in 2017, 2016 and 2015, respectively.

Note 11 – Income Taxes

The income tax provision is comprised of the following:

	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
Current:			
Federal	\$ —	\$ —	\$ 10
State	(3)	(133)	(18)
Foreign	—	—	—
	(3)	(133)	(8)
Deferred:			
Federal	—	—	—
State	—	—	—
Total income tax provision	\$ (3)	\$ (133)	\$ (8)

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A reconciliation of the United States federal statutory income tax rate to our effective income tax rate is as follows:

	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
United States federal statutory rate	35.00%	35.00%	35.00%
State taxes, net of federal benefit	(0.01)%	(0.31)%	(0.04)%
Valuation allowance	(35.94)%	(35.43)%	(33.36)%
Stock options	—	—	(1.62)%
Prior year true-up	—	(0.06)%	0.03%
R&D Credit	1.43%	0.66%	0.38%
Warrants	—	—	(0.14)%
Other	(0.50)%	(0.33)%	(0.29)%
Effective income tax rate	<u>(0.02)%</u>	<u>(0.47)%</u>	<u>(0.04)%</u>

In 2017, 2016 and 2015, we had pre-tax losses of \$17, \$28 and \$29 million, respectively, which are available for carry forward to offset future taxable income. We made determinations to provide full valuation allowances for our net deferred tax assets at the end of 2017, 2016 and 2015, including NOL carryforwards generated during the years, based on our evaluation of positive and negative evidence, including our history of operating losses and the uncertainty of generating future taxable income that would enable us to realize our deferred tax assets.

Deferred tax assets (liabilities) consist of the following:

	Year Ended December 31, 2017	Year Ended December 31, 2016
Deferred tax assets:		
Reserves and accruals	\$ 963	\$ 1,063
State tax	—	1
Research and development credits and other credits	1,300	1,092
Net operating loss carry forward	22,448	29,186
Stock based compensation	9,260	13,031
Other	54	88
Total deferred tax assets	<u>34,025</u>	<u>44,461</u>
Valuation allowance	(34,025)	(44,455)
Deferred tax assets after valuation allowance	<u>—</u>	<u>6</u>
Deferred tax liability:		
Depreciation and amortization	—	(6)
Total deferred tax liability	<u>—</u>	<u>(6)</u>
Net deferred tax assets	<u>\$ —</u>	<u>\$ —</u>

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act (the "Act"). The Act amends the Internal Revenue Code to reduce tax rates and modify policies, credits, and deductions for individuals and businesses. For businesses, the Act reduces the corporate federal tax rate from a maximum of 35% to a 21% rate. The rate reduction will be taking effect on January 1, 2018. Therefore, we applied the tax rate of 21% to the ending balance of federal deferred tax assets, but because we provided a full valuation allowance against our net deferred tax assets, no tax impact is recorded due to the tax rate change.

The Act changes the worldwide territorial tax system. Therefore, the deemed repatriation tax applies to undistributed earnings of certain non-U.S. subsidiaries. The company has no deemed repatriation tax liability because its foreign subsidiary's accumulated earnings is negative. We also assess the tax impact of the Act for 2018 and future years and do not believe there is a need to change our valuation allowance position as of December 31, 2017.

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In assessing the realization of deferred tax assets, management considers whether it is more likely than not that some portion or all of deferred assets will not be realized. The ultimate realization of the deferred tax assets is dependent upon the generation of future taxable income during the periods in which those temporary differences become deductible.

Based on the available objective evidence, management believes it is more likely than not that the net deferred tax assets at December 31, 2017 will not be fully realizable. Accordingly, management has maintained a full valuation allowance against its net deferred tax assets at December 31, 2017. The net change in the total valuation allowance for the 12 months ended December 31, 2017 was a decrease of \$10,430. At December 31, 2017, we had federal and state net operating loss carry-forwards of approximately \$87,429 and \$98,425, respectively, expiring beginning in 2027 for federal and began expiring in 2016, for state. At December 31, 2017, we had federal research and development credit carry-forwards of approximately \$1,300, expiring beginning in 2031.

Internal Revenue Code Section 382 places a limitation (the "Section 382 Limitation") on the amount of taxable income that can be offset by net operating loss carry forwards after a change in control (generally greater than 50% change in ownership) of a loss corporation. California, the state in which our headquarters was once located, has similar rules. Our capitalization described herein may have resulted in such a change. Generally, after a control change, a loss corporation cannot deduct net operating loss carry forwards generated in years prior to the deemed change of control under IRC Section 382 in excess of the Section 382 Limitation.

We are required to recognize the financial statement effects of a tax position when it is more likely than not, based on the technical merits, that the position will be sustained upon examination. As a result, we have provided contingent reserve under ASC 740-10 of \$316 at December 31, 2017, and December 31, 2016. Our tax returns are subject to review by various tax authorities. The returns subject to review are those from 2005 forward.

Our policy is to recognize interest and penalties, if any, accrued on any unrecognized tax benefits, as a component of income tax expense. We had no interest or penalties accrued for the year ended December 31, 2017.

A reconciliation of beginning and ending amounts of unrecognized tax benefits follows:

	Year Ended December 31, 2017	Year Ended December 31, 2016	Year Ended December 31, 2015
Balance at the beginning of the year	\$ 316	\$ 316	\$ 316
Additions based on tax positions related to the current year	—	—	—
Additions for tax positions of prior years	—	—	—
Settlements	—	—	—
Lapse of applicable statute of limitations	—	—	—
Balance at the end of the year	<u>\$ 316</u>	<u>\$ 316</u>	<u>\$ 316</u>

Note 12 – Fair Value Measurement

We apply fair value accounting for all financial assets and liabilities and non-financial assets and liabilities that are recognized or disclosed at fair value in the financial statements on a recurring basis. Fair value is estimated by applying the following hierarchy, which prioritizes the inputs used to measure fair value into three levels and bases the categorization within the hierarchy upon the lowest level of input that is available and significant to the fair value measurement:

Level 1 – Quoted prices in active markets for identical assets or liabilities.

Level 2 – Observable inputs other than quoted prices in active markets for identical assets and liabilities, quoted prices for identical or similar assets or liabilities in inactive markets, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.

Level 3 – Inputs that are generally unobservable and typically reflect management's estimate of assumptions that market participants would use in pricing the asset or liability.

The carrying amounts for cash and cash equivalents, investments in certificates of deposit, accounts payable and accrued expenses approximate their fair values due to the short period of time until maturity.

Mutual Funds: Valued at the quoted net asset value (NAV) of shares held.

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U.S. Agency securities: Fair value measured at the closing price reported on the active market on which the individual securities are traded.

The following table shows our cash and available-for-sale securities adjusted cost, gross unrealized gains, gross unrealized losses and fair value by significant investment category recorded as cash and cash equivalents of investments available for sale as of December 31, 2017 and 2016 (in thousands):

	December 31, 2017					
	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash and Cash Equivalents	Investments Available for Sale
Cash	\$ 1,972	\$ —	\$ —	\$ 1,972	\$ 1,972	\$ —
Level 1:						
Mutual funds	616	—	—	616	616	—
U.S. agency securities	2,001	—	(1)	2,000	547	1,453
	2,617	—	(1)	2,616	1,163	1,453
Total	\$ 4,589	\$ —	\$ (1)	\$ 4,588	\$ 3,135	\$ 1,453
	December 31, 2016					
	Adjusted Cost	Unrealized Gains	Unrealized Losses	Fair Value	Cash and Cash Equivalents	Investments Available for Sale
Cash	\$ 3,432	\$ —	\$ —	\$ 3,432	\$ 3,432	\$ —
Level 1:						
Mutual funds	3,195	—	—	3,195	3,195	—
U.S. government securities	1,254	—	—	1,254	—	1,254
U.S. agency securities	7,996	2	(3)	7,995	—	7,995
	12,445	2	(3)	12,444	3,195	9,249
Total	\$ 15,877	\$ 2	\$ (3)	\$ 15,876	\$ 6,627	\$ 9,249

The maturities of our marketable securities generally range from within one to two years. Actual maturities could differ from contractual maturities due to call or prepayment provisions.

Note 13 – Litigation

We have eleven intellectual property infringement lawsuits pending in the United States District Court for the Eastern District of Texas, Tyler Division, and United States Court of Appeals for the Federal Circuit (“USCAFC”).

VirnetX Inc. v. Apple, Inc. (Case 6:12-CV-00855-LED)

On March 30, 2015, the United States Court for the Eastern District of Texas, Tyler Division, issued an order finding substantial overlap between the remanded portions of the Civil Action Case 6:10-CV-00417-LED (VirnetX vs. Cisco et. al.), and the ongoing Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case. The jury trial in this case was held on January 25, 2016. On February 4, 2016, a jury in the United States Court for the Eastern District of Texas, Tyler Division, awarded us \$625.6 million in a verdict against Apple Inc. for infringing four of our US patents, marking it the second time a federal jury has found Apple liable for infringing VirnetX’s patented technology. The verdict includes royalties awarded to us based on an earlier patent infringement finding (**Case 6:10-CV-00417-LED**) against Apple. The jury found that Apple’s modified VPN On-Demand, iMessage and FaceTime services infringed VirnetX’s patents and that Apple’s infringement was willful. In addition to determining the royalty owed by Apple for its prior infringement, this verdict also includes an award based on the jury’s finding that Apple’s modified VPN On Demand, iMessage and FaceTime services have continued to infringe VirnetX’s patents. The post-trial hearing was held on May 25, 2016 in the United States Court for the Eastern District of Texas, Texarkana Division. On July 29, 2016, the court issued a new order, vacating its previous orders

consolidating the cases (Case No. 6:10-cv-417, Docket No. 878 (“Apple I case”); Case No. 6:12-cv-855, Docket No. 220 (“Apple II case”)), ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II case will be retried after Apple I case. Events and developments subsequent to the order from the court are described to support Apple I and Apple II matters.

VirnetX Inc. v. Cisco Systems, Inc. et al. (Case 6:10-CV-00417-LED) (“Apple I”)

On August 11, 2010, we initiated a lawsuit by filing a complaint against Aastra USA, Inc. (“Aastra”), Apple, Cisco Systems, Inc. (“Cisco”), and NEC Corporation (“NEC”) in the United States District Court for the Eastern District of Texas, Tyler Division, pursuant to which we alleged that these parties infringe on certain of our patents. We sought damages and injunctive relief. Aastra and NEC agreed to sign license agreements with us and we agreed to drop all the accusations of infringement against them. At the pre-trial hearing, the judge decided to conduct separate jury trial for each defendant, and try only the case against Apple on the scheduled trial date. The jury trial of our case against Cisco was held on March 4, 2013. The jury in our case against Cisco came back with a verdict of non-infringement also determined that all our patents-in-suit patents are not invalid. Our motions for a new trial and Cisco’s infringement of certain VirnetX patents were denied and the case against Cisco was closed.

The jury trial of our case against Apple was held on October 31, 2012. On November 6, 2012, a jury in the United States Court for the Eastern District of Texas, Tyler Division, awarded us over \$368 million in a verdict against Apple for infringing four of our patents. On February 26, 2013, the court issued its Memorandum Opinion and Order regarding post-trial motions resulting from the prior jury verdict denying Apple’s motion to reduce the damages awarded by the jury for past infringement. The Court further denied Apple’s request for a new trial on the liability and damages portions of the verdict and granted our motions for pre-judgment interest, post-judgment interest, and post-verdict damages to date. The Court ordered that Apple pay \$34 thousand in daily interest up to final judgment and \$330 thousand in daily damages for infringement up to final judgment for certain Apple devices included in the verdict. The Court denied our request for a permanent injunction and severed the future infringement portion into its own separate proceedings under Case 6:13-CV-00211-LED.

On July 3, 2013, Apple filed an appeal of the judgment dated February 27, 2013 and order dated June 4, 2013 denying Apple’s motion to alter or amend the judgment to the USCAFC. On September 16, 2014, USCAFC issued their opinion, affirming the jury’s finding that all 4 of our patents are valid, confirming the jury’s finding of infringement of VPN on Demand under many of the asserted claims of our ‘135 and ‘151 patents, and confirming the district’s court’s decision to allow evidence concerning our licenses and royalty rates in connection with the determination of damages. In its opinion, the USCAFC also vacated the jury’s damages award and the district court’s claim construction with respect to parts of our ‘504 and ‘211 patents and remanded the damages award and determination of infringement with respect to FaceTime –for further proceedings consistent with its opinion. On October 16, 2014, we filed a petition with the USCAFC, requesting a rehearing and rehearing en banc of the Federal Circuit’s September 14, 2014, decision concerning VirnetX’s litigation against Apple Inc. On December 16, 2014, USCAFC denied our petition requesting a rehearing and rehearing en banc of the Federal Circuit’s September 14, 2014, decision and remanded the case back to the Eastern District of Texas, Tyler Division, for further proceedings consistent with its opinion. On February 25, 2015, USCAFC granted Apple’s motions to lift stay of proceedings and vacate Case 6:13-CV-00211-LED. On March 30, 2015, the court issued an order finding substantial overlap between the remanded portions of this case and the ongoing Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case.

On July 29, 2016, the court issued a new order, vacating its previous orders consolidating the cases Apple I case and Apple II case, ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II will be retried after Apple I case. The jury trial in this case was held on September 26, 2016. On September 30, 2016, a Jury in the United States Court for the Eastern District of Texas, Tyler Division, in the case VirnetX Inc., et al. v. Apple Inc., No. Apple I, has awarded VirnetX \$302.4 million in a verdict against Apple for infringing four VirnetX patents, marking the third time a federal jury has found Apple liable for infringing VirnetX’s patented technology.

The verdict includes royalties awarded to VirnetX, for unresolved issues in the Apple I case, remanded back from the USCAFC, related to (1) damages owed to VirnetX for infringement by Apple’s original VPN-on-Demand (VOD) and

(2) the alleged infringement by Apple’s original FaceTime product, under the new claim construction of “secure communication link” pertaining to the ’504 and ’211 patents by the USCAFC, and the damages associated with that infringement. The hearing on all the post-trial motions was held on November 22, 2016.

On September 29, 2017, the United States District Court for the Eastern District of Texas, Tyler Division, entered Final Judgement and issued its Memorandum Opinion and Order regarding post-trial motions resulting from the prior \$302.4 million jury verdict for VirnetX in the Apple I case.

In the Order, the Court denied all of Apple’s post-trial motions including motion for judgment as a matter of law of non-infringement, motion for judgment as a matter of law on damages, motion for a new trial on infringement, and motion for a new trial on damages. The Court granted all VirnetX’s post-trial motions including motion for willful infringement and enhanced the royalty rate during the willfulness period by 50 percent, from \$1.20 to \$1.80 per device, awarding VirnetX, enhanced damages in the amount of \$41.3 million against Apple thereby, granting VirnetX a total sum of \$343.7 million in pre-interest damages. The Court also awarded costs, certain attorneys’ fees, and prejudgment interest to VirnetX, and directed the parties to meet and confer regarding these amounts. On October 13, 2017, having met and conferred and having reached agreements on all amounts, parties jointly filed a motion asking the Court to grant VirnetX an additional sum in the amount of \$96 million in agreed Bill of Costs, Attorneys’ Fees, and Prejudgment Interest. The Final Judgement is only subject to appeal stemming from new issues unresolved in the Apple I case, remanded back from the United States Court of Appeals for the Federal Circuit. The total Final Judgement amount including Jury Verdict, Willful Infringement, Interest, Costs and Attorney Fees is \$439.7 million.

On October 27, 2017 Apple filed its notice of appeal of the Final Judgment entered on September 29, 2017 to the United States Court of Appeals for the Federal Circuit. This case has now been closed and events and developments subsequent to the notice of appeal are described below under **VirnetX Inc. v. Cisco Systems, Inc. (USCAFC Case 18-1197-CB) (Appeal of Apple I Case)**.

VirnetX Inc. v. Apple, Inc. (Case 6:12-CV-00855-LED) (“Apple II”)

On November 6, 2012, we filed a complaint against Apple in the United States District Court for the Eastern District of Texas, Tyler Division for willfully infringing four of our patents, U.S. Patent Nos. 6,502,135, 7,418,504, 7,921,211 and 7,490,151, and seeking both an unspecified amount of damages and injunctive relief. The accused products include the iPhone 5, iPod Touch 5th Generation, iPad 4th Generation, iPad mini, and the latest Macintosh computers. Due to their release dates, these products were not included in the previous lawsuit that concluded with a Jury verdict on November 6, 2012 that was subsequently upheld by the United States District Court for the Eastern District of Texas, Tyler Division, on February 26, 2013. On July 1, 2013, we filed a consolidated and amended complaint to include U.S. Patent No. 8,051,181 and consolidate Civil Action No. 6:11-cv-00563-LED. On August 27, 2013, we filed an amended complaint including allegations of willful infringement related to U.S. Patent No. 8,504,697 seeking both damages and injunctive relief. The Markman hearing in this case was held on May 20, 2014 and on August 8, 2014, issued its Markman Order, denying Apple’s motion for summary judgment of indefiniteness, in which Apple alleged that some of the disputed claims terms in the patents asserted by us were invalid for indefiniteness. In a separate order, the court granted in part and denied in part our motion for partial summary judgment on Apple’s invalidity counterclaims, precluding Apple from asserting invalidity as a defense against infringement of the claims that were tried before a jury in our prior litigation against Apple (VirnetX vs. Cisco et. al., Case 6:10-CV-00417-LED). The jury trial in this case was scheduled for October 13, 2015. On March 30, 2015, the court issued an order finding substantial overlap between this case and the remanded portions of Case 6:10-CV-00417-LED (VirnetX vs. Cisco et. al.). The court consolidated the two civil actions under Civil Action Case 6:12-CV-00855-LED (VirnetX Inc. v. Apple, Inc.) and designated it as the lead case. On July 29, 2016, the court issued a new order, vacating its previous orders consolidating the cases Apple I case and Apple II case, ordering that the two cases be retried separately, and setting the retrial date for Apple I case with jury selection to begin on September 26, 2016. The court also ordered that the issue of willfulness in both cases is bifurcated and that the Apple II will be retried after Apple I case.

On September 29, 2017, the Court issued an order denying Apple’s Motion to Stay. The Court ordered the parties to meet and confer and file a joint motion with a proposed trial date by October 13, 2017. The parties have met, conferred and filed a joint motion on the proposed trial dates. On November 9, 2017, the court issued its order setting this case for jury selection on April 2, 2018 in Tyler, Texas.

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On January 5, 2018, Apple filed a Petition for Writ of Mandamus with the USCAFC requesting the court to stay the upcoming limited retrial of the Apple II pending the USCAFC's decision in related consolidated appeal *VirnetX Inc. v. Apple Inc.*, Cases 2017-1591. On February 22, 2018, the USCAFC issued its order denying Apple's Petition for Writ of Mandamus. The Apple II case is proceeding on schedule for jury selection on April 2, 2018 per the district court's order.

VirnetX Inc. v. Cisco Systems, Inc. (USCAFC Case 18-1197-CB) (Appeal of Apple I Case)

On October 27, 2017 Apple filed its notice of appeal of the Final Judgment entered on September 29, 2017 to the United States Court of Appeals for the Federal Circuit.

On January 5, 2018, Apple filed a motion requesting a stay of the briefing schedule in this appeal pending this court's decision in related consolidated appeal *VirnetX Inc. v. Apple Inc.*, Cases 2017-1591. On January 24, 2018, USCAFC denied Apple's motion requesting a stay of the briefing schedule and ordered Apple to file its opening brief no later than March 19, 2018.

VirnetX Inc. v. Apple, Inc. (Case 15-1934)

On July 10, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the United States Patent and Trademark Office, Patent Trial and Appeal Board ("PTAB") in IPR2014-00237 and IPR2014-00238, related to U.S. Patent No. 8,504,697. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on the grounds discussed in IPR2014-00238. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-1211)

On September 28, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2014-00403 and IPR2014-00404 and on October 22, 2015 for IPR2014-00481 and IPR2014-00482 involving our U.S. Patent Nos. 7,188,180, and 7,987,274. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on the grounds discussed in IPR2014-00403 and IPR2014-00481. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-1480)

On November 30, 2015, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in inter-partes reexamination no. 95/001,949 related to U.S. Patent No. 8,051,181. The oral arguments in this case were heard on November 7, 2016. On December 9, 2016, the USCAFC affirmed the PTAB based on certain grounds. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 16-119)

On March 4, 2016, we filed a petition for writ of mandamus with the USCAFC, requesting the USCAFC's intervention to revoke the PTAB's decision joining Apple to IPR2015-01046 and IPR2015-01047, related to U.S. Patent Nos. 6,502,135 and 7,490,151. On March 18, 2016, the USCAFC denied the petition without prejudice to us raising the arguments on appeal after the PTAB's final decisions. We are currently evaluating our options in this case.

VirnetX Inc. v. Apple, Inc. (Case 17-1131)

On October 31, 2016, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2015-00810 and IPR2015-00812, on November 9, 2016 for IPR2015-00811, and on November 28, 2016 for IPR2015-00866, IPR2015-00868, IPR2015-00870 and IPR2015-00871 involving our U.S. Patent Nos. 8,868,705, 8,850,009, 8,458,341, 8,516,131, and 8,560,705. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral argument were held on March 5, 2018. We are awaiting the courts ruling in this matter.

VirnetX Inc. v. The Mangrove Partners (Case 17-1368)

On December 16, 2016, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2015-01046, and on December 20, 2016 for IPR2015-1047, involving our U.S. Patent Nos. 6,502,135, and 7,490,151. These appeals also involve Apple, Inc. and one of them involves Black Swamp IP, LLC. On April 27, 2017, the USCAFC stayed these appeals pending the USCAFC's en banc decision in *Wi-Fi One, LLC v. Broadcom Corporation*, No. 2015-1944. The stay was lifted on January 31, 2018, and briefing is now ongoing.

VirnetX Inc. v. Apple Inc., Cisco Systems, Inc. (Case 17-1591)

On February 7, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in inter-partes reexamination nos. 95/001,788, 95/001,789, and 95/001,856 related to our U.S. Patent Nos. 7,921,211 and 7,418,504. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral arguments have not yet been scheduled.

VirnetX Inc. v. Apple Inc. (Case 17-2490)

On August 23, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2016-00331 and IPR2016-00332 involving our U.S. Patent No. 8,504,696. These appeals have been consolidated. The briefing in these appeals has been concluded; the oral arguments have not yet been scheduled.

In re VirnetX Inc. (Case 17-2593)

On September 22, 2017, we filed appeals with the USCAFC, appealing the invalidity findings by the PTAB in IPR2016-00693 and IPR2016-00957 involving our U.S. Patent Nos. 7,418,504 and 7,921,211. These appeals have been consolidated. The briefing in these appeals is ongoing. The entity that initiated the IPRs, Black Swamp IP, LLC, indicated on October 18, 2017, that it would not participate in the appeals. On November 27, 2017, the United States Patent and Trademark Office indicated that it would intervene in the appeals. On January 19, 2018, the USCAFC stayed these appeals pending the USCAFC's decision in Case 17-1591.

One or more potential intellectual property infringement claims may also be available to us against certain other companies who have the resources to defend against any such claims. Although we believe these potential claims are worth pursuing, commencing a lawsuit can be expensive and time-consuming, and there is no assurance that we will prevail on such potential claims. In addition, bringing a lawsuit may lead to potential counterclaims which may preclude our ability to commercialize our initial products, which are currently in development. Currently, we are not a party to any other pending legal proceedings, and are not aware of any proceeding threatened or contemplated against us by any governmental authority or other party.

Note 14 – Quarterly Financial Information (unaudited)

	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>
	(in thousands except per share)			
2017				
Revenue	\$ 375	\$ 396	\$ 375	\$ 401
Loss from operations	\$ (3,906)	\$ (3,811)	\$ (3,562)	\$ (6,042)
Net loss	\$ (3,894)	\$ (3,798)	\$ (3,552)	\$ (6,034)
Basic earnings (loss) per common share	\$ (0.07)	\$ (0.07)	\$ (0.06)	\$ (0.10)
Diluted earnings (loss) per common share	\$ (0.07)	\$ (0.07)	\$ (0.06)	\$ (0.10)
	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>
	(in thousands except per share)			
2016				
Revenue	\$ 375	\$ 398	\$ 375	\$ 402
Loss from operations	\$ (8,618)	\$ (5,353)	\$ (7,287)	\$ (7,247)
Net loss	\$ (8,610)	\$ (5,337)	\$ (7,387)	\$ (7,235)
Basic earnings (loss) per common share	\$ (0.16)	\$ (0.10)	\$ (0.13)	\$ (0.12)
Diluted earnings (loss) per common share	\$ (0.16)	\$ (0.10)	\$ (0.13)	\$ (0.12)

Note 15 – Subsequent Event

On March 8, 2018, we amended our August 20, 2015 equity offering sales agreement (“Amended Agreement”) with Cowen and Company, LLC (“Cowen”), whereby the maximum aggregate value of the Company’s common stock (“Shares”) we may offer and sell, from time to time, was increased from \$35,000,000 to \$50,000,000. The Company intends to use the proceeds of this offering for Gabriel product development and marketing, and general corporate purposes, which may include working capital, capital expenditures, other corporate expenses and acquisitions of complementary products, technologies or businesses.

Under the Amended Agreement, Cowen may sell Shares in an “at-the-market” offering (“ATM”) as defined in Rule 415 promulgated under the Securities Act of 1933, including sales made directly on the NYSE American, LLC, on any other existing trading market for the Shares, or to or through a market maker. In addition, under the Amended Agreement, Cowen may sell the Shares by any other method permitted by law, including private offerings. Subject to the terms and conditions of the Amended Agreement, Cowen will act as sales agent and use commercially reasonable efforts to sell on our behalf all the shares of common stock requested to be sold by us, consistent with its normal trading and sales practices, on mutually agreed terms between Cowen and us.

Between January 1, 2018 and March 14, 2018, we sold 1,749,185 shares of common stock under the ATM program. The average sales price per common share sold was \$4.02 and the aggregate proceeds from the sales totaled \$7,032. Sales commissions, fees and other costs associated with the ATM transactions totaled \$211.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and
Stockholders of VirnetX Holding Corporation

Opinion on Internal Control over Financial Reporting

We have audited VirnetX Holding Corporation’s (the Company’s) internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2017, based on criteria established in *Internal Control—Integrated Framework (2013)* issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated balance sheets and the related consolidated statements of income, comprehensive loss, stockholders’ equity, and cash flows of the Company, and our report dated March 16, 2018, expressed an unqualified opinion.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the 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 audit in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

Definition and Limitations of Internal Control over Financial Reporting

A company’s internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company’s internal control over financial reporting includes those policies and procedures that (1) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (3) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company’s assets that could have a material effect on the financial statements.

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

/s/ Farber Hass Hurley LLP

Chatsworth, California
March 16, 2018

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

None.

Item 9A. Controls and Procedures.

Evaluation of Disclosure Controls and Procedures

Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of the design and operation of our disclosure controls and procedures, as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, December 31, 2017.

The purpose of this evaluation was to determine whether as of December 31, 2017 our disclosure controls and procedures were effective to provide reasonable assurance that the information we are required to disclose in our filings with the SEC, (i) is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosure.

Based on their evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that as of December 31, 2017, our disclosure controls and procedures were effective.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal controls over financial reporting (as such term is defined in rules 13a-15 (f) under the Securities Exchange Act of 1934, as amended) during the fiscal year ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company. Internal control over financial reporting is a process to provide reasonable assurance regarding the reliability of our financial reporting for external purposes in accordance with accounting principles generally accepted in the United States of America. Internal control over financial reporting includes maintaining records that in reasonable detail accurately and fairly reflect our transactions; providing reasonable assurance that transactions are recorded as necessary for preparation of our financial statements; providing reasonable assurance that receipts and expenditures of Company assets are made in accordance with management authorization; and providing reasonable assurance that unauthorized acquisition, use or disposition of Company assets that could have a material effect on our financial statements would be prevented or detected on a timely basis. Because of its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that a misstatement of our financial statements would be prevented or detected.

Management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that the Company's internal control over financial reporting was effective as of December 31, 2017. There were no changes in our internal control over financial reporting during the period ended December 31, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. Farber Hass Hurley LLP has audited our internal control over financial reporting as of December 31, 2017; their report is included elsewhere herein.

Item 9B. Other Information.

On March 16, 2018, we sent a letter to PITA acknowledging the termination of the Amended and Restated Revenue Sharing Agreement and the Amended and Restated Gabriel License Agreement with PITA. Although we consider the PITA Agreements terminated as of March 16, 2018, our letter also constituted our (i) notice of termination of the Amended and Restated Revenue Sharing Agreement pursuant to Section 5.2(b) thereof and (ii) notice of termination of the Amended and Restated Gabriel License Agreement pursuant to Section 5.2(b) thereof to PITA.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

The information required by this item will be contained in our definitive proxy statement to be filed with the SEC in connection with our 2018 annual meeting of stockholders (the “Proxy Statement”), which is expected to be filed not later than 120 days after the end of our fiscal year ended December 31, 2017, and is incorporated in this report by reference.

Item 11. Executive Compensation.

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

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

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

Securities Authorized for Issuance Under the Equity Compensation Plans

We have a stock incentive plan for employees and others called the “VirnetX Holding Corporation 2013 Stock Plan”, or the Plan, which has been approved by our stockholders. The Plan provides for the granting of up to 14,124,469 shares of our common stock, including stock options and stock purchase rights, and will expire in 2023. As of December 31, 2017, there were 2,928,562 shares available to be granted under the Plan. We had 5,138,066 and 5,378,571 options outstanding at December 31, 2017, and December 31, 2016, respectively, with an average exercise price of \$8.41 and \$8.52, respectively. We had 469,661 and 423,435 restricted stock units outstanding at December 31, 2017 and December 31, 2016, respectively, with a weighted average grant price of \$5.19 and \$8.08 respectively.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity compensation plans approved by security holders	5,632,727	\$ 8.14	2,928,562
Equity compensation plans not approved by security holders	—	—	—
Total	5,632,727	\$ 8.14	2,928,562

On February 24, 2017, June 2, 2017 and September 14, 2017 the Compensation Committee granted 1,576,000 options and 195,665 RSU’s to the employees of VirnetX Inc. On June 1, 2017, the Compensation Committee granted 37,500 options and 24,999 RSUs to members of the Board of Directors of VirnetX, Inc.

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

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services.

The information required by this item will be set forth in the Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules.

- (a) The following documents are filed as part of this Annual Report on Form
- (1) *Financial Statements*: See the Index to Consolidated Financial Statements under Item 8 of this Annual Report on Form 10-K.
 - (2) *Financial Statement Schedule*: Financial statement schedules are omitted because they are not applicable or the required information is shown in the financial statements or notes thereto. All other schedules are omitted because of the absence of conditions under which they are required or because the required information is given in the financial statements or the notes thereto.
 - (3) *Exhibits*: The documents listed in the Exhibit Index of this Annual Report on Form 10-K are incorporated by reference or are filed with this Annual Report on Form 10-K, in each case as indicated therein (numbered in accordance with Item 601 of Regulation S-K).

EXHIBIT INDEX

Exhibit Number	Description	Incorporated by reference herein			
		Form	Exhibit No.	Filing Date	File No.
3.1	Certificate of Incorporation of the Company.	8-K	3.1	11/01/2007	000-26895
3.2	By-Laws of the Company.	8-K	3.2	11/01/2007	000-26895
4.1	Form of Warrant Agency Agreement by and between the Company and Corporate Stock Transfer, Inc. as Warrant Agent.	S-1/A	4.1	01/16/2009	333-153645
4.2	Form of Series I Warrant.	8-K	4.1	09/03/2009	001-33852
4.3	Specimen Common Stock Certificate.	S-3	4.1	08/21/2015	333-206497
4.4	Form of Senior Indenture	S-3	4.2	08/21/2015	333-206497
4.5	Form of Subordinated Indenture	S-3	4.4	08/21/2015	333-206497
10.1	Form of Indemnification Agreement by and between the Company and each of Kendall Larsen, Robert D. Short III, Gary Feiner, Michael F. Angelo, Thomas M. O'Brien and Richard Nance.	8-K	10.3	07/12/2007	000-26895
10.2*	2007 Stock Plan, as amended on April 13, 2012.	10-Q	10.2	05/10/2012	001-33852
10.3*	Amended Form of Stock Option Agreement – 2007 Stock Plan.	10-Q	4.5	05/10/2011	001-33852
10.4*	Form of Restricted Stock Unit Award Agreement – 2007 Stock Plan.	10-Q	10.3	05/10/2012	001-33852
10.5*	2013 Equity Incentive Plan.	DEF 14A	Appendix A	04/12/2013	001-33852
10.6*	Form of Stock Option Agreement – 2013 Equity Incentive Plan.	10-K	10.6	03/02/2015	001-33852
10.7*	Form of Restricted Stock Unit Agreement – 2013 Equity Incentive Plan.	10-K	10.7	03/02/2015	001-33852
10.8	Voting Agreement among the Company and certain of its stockholders, dated as of December 12, 2007.	10-K	10.11	03/31/2008	001-33852
10.9	Securities Purchase Agreement, dated as of September 2, 2009, by and between the Company and the Purchasers (as defined therein).	8-K	10.1	09/03/2009	001-33852
10.10	Form of Registration Rights Agreement by and between the Company and the Purchasers (as defined therein).	8-K	10.2	09/03/2009	001-33852

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Exhibit Number	Description	Incorporated by reference herein			
		Form	Exhibit No.	Filing Date	File No.
10.11	Form of Underwriting Agreement between VirnetX Holding Corporation and Gilford Securities Incorporated.	S-1/A	1.1	01/16/2009	333-153645
10.12	Patent License and Assignment Agreement by and between the Company and Leidos, Inc. (formerly Science Applications International Corporation) dated as of August 12, 2005.	8-K	10.4	07/12/2007	000-26895
10.13	Amendment No. 1 to Patent License and Assignment Agreement by and between the Company and Leidos, Inc. dated as of November 2, 2006.	8-K	10.6	07/12/2007	000-26895
10.14	Amendment No. 2 to Patent License and Assignment Agreement by and between VirnetX, Inc. and Leidos, Inc. dated as of March 12, 2008.	8-K	10.1	03/18/2008	001-33852
10.15	Security Agreement by and between the Company and Leidos, Inc. dated as of August 12, 2005.	8-K	10.5	07/12/2007	000-26895
10.16	Assignment Agreement between the Company and Leidos, Inc. dated as of December 21, 2006.	8-K	10.7	07/12/2007	000-26895
10.17	Professional Services Agreement by and between the Company and Leidos, Inc. dated as of August 12, 2005.	8-K	10.8	07/12/2007	000-26895
10.18**	Engagement Letter dated June 8, 2009, by and between McKool Smith, a professional corporation, and VirnetX, Inc.	10-Q	10.1	08/10/2009	001-33852
10.19**	Engagement Letter dated April 15, 2010, by and between McKool Smith, a professional corporation, and VirnetX, Inc.	10-Q	10.1	05/07/2010	001-33852
10.20**	Settlement and License Agreement, by and between Microsoft Corporation and VirnetX, Inc., dated May 14, 2010.	10-Q/A	10.1	01/31/2011	001-33852
10.21***	Amended Settlement and License Agreement, by and between Microsoft Corporation and VirnetX, Inc., dated December 17, 2014.	10-K	10.23	03/02/2015	001-33852
10.22*	Employment Offer Letter from VirnetX, Inc. to Richard H. Nance.	10-Q	10.4	05/10/2012	001-33852
10.23	Patent Licensing Representative Agreement, by and between IPValue Management, Inc. and VirnetX, Inc., dated May 8, 2015.	10-Q	10.1	05/11/2015	001-33852
10.24**	Amended and Restated Revenue Sharing Agreement by and between VirnetX Holding Corporation and Public Intelligence Technology Associates, dated October 18, 2017.	10-Q	10.1	11/9/2017	001-33852

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Exhibit Number	Description	Incorporated by reference herein			
		Form	Exhibit No.	Filing Date	File No.
10.25**	Amended and Restated Gabriel License Agreement by and between VirnetX Holding Corporation and Public Intelligence Technology Associates, dated October 18, 2017.	10-Q	10.2	11/9/2017	001-33852
10.26	Sales Agreement, dated August 20, 2015, by and between VirnetX Holding Corporation and Cowen and Company, LLC.	S-3	1.2	8/21/2015	333-206497
10.27	Amendment No. 1 to Sales Agreement, dated March 8, 2018, by and between VirnetX Holding Corporation and Cowen and Company, LLC.	8-K	10.2	3/9/2018	001-33852
21.1	Subsidiaries of VirnetX Holding Corporation.				
23.1	Consent of Farber Hass Hurley LLP, Independent Registered Public Accounting Firm.				
24.1	Power of Attorney (contained on signature page hereto)				
31.1	Chief Executive Officer Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act.				
31.2	Chief Financial Officer Certification pursuant to Rule 13a-14(a) of the Securities Exchange Act.				
32.1†	Chief Executive Officer Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				
32.2†	Chief Financial Officer Certification pursuant to 18 U.S.C. Section 1350 as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				
101.INS	XBRL Instance Document				
101.SCH	XBRL Taxonomy Extension Schema Document				
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				

* Indicates management contract or compensatory plan.

** Confidential treatment has been granted by the U.S. Securities and Exchange Commission as to certain portions of this Exhibit.

*** Portions of this Exhibit have been omitted pending a determination by the Securities and Exchange Commission as to whether these portions should be granted confidential treatment.

† The certifications attached as Exhibit 32.1 and 32.2 that accompany this Annual Report on Form 10-K are not deemed filed with the Securities and Exchange Commission and are not to be incorporated by reference into any filing of VirnetX Holding Corporation under the Securities Act of 1933, as amended, or the Securities Act of 1934, as amended, whether before or after the date of this Form 10-K, irrespective of any general incorporation language contained in such filing.

POWER OF ATTORNEY

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

Pursuant to the requirements of the Securities Exchange Act of 1934, this Annual Report on Form 10-K has been signed below by the following persons on behalf of the registrant and in the capacities indicated.

<u>Name</u>	<u>Capacity</u>	<u>Date</u>
<u>/s/ Kendall Larsen</u> Kendall Larsen	Director, Chief Executive Officer and President <i>(Principal Executive Officer)</i>	March 16, 2018
<u>/s/ Richard H. Nance</u> Richard H. Nance	Chief Financial Officer <i>(Principal Financial Officer and Principal Accounting Officer)</i>	March 16, 2018
<u>/s/ Robert D. Short III</u> Robert D. Short III	Director	March 16, 2018
<u>/s/ Gary Feiner</u> Gary Feiner	Director	March 16, 2018
<u>/s/ Michael F. Angelo</u> Michael F. Angelo	Director	March 16, 2018
<u>/s/ Thomas M. O'Brien</u> Thomas M. O'Brien	Director	March 16, 2018

Subsidiaries of Registrant

Name of Entity	Jurisdiction of Incorporation or Organization
Network Research Corporation Japan Ltd. (known as Network Research Corporation Japan Kabushiki Kaisha in Japan)	Japan
VirnetX Inc.	Delaware

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (No. 333-206497) and Form S-8 (Nos. 333-149883, 333-196064, and 333-218467) of our reports dated March 16, 2018, relating to the consolidated financial statements of VirnetX Holding Corporation (the "Company"), and the effectiveness of the Company's internal control over financial reporting, appearing in this Annual Report on Form 10-K of the Company for the year ended December 31, 2017.

/s/ Farber Hans Hurley LLP

Chatsworth, California

March 16, 2018

CERTIFICATIONS

I, Kendall Larsen, certify that:

1. I have reviewed this Annual Report on Form 10-K of VirnetX Holding Corporation for the fiscal year ended December 31, 2017;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Kendall Larsen
Kendall Larsen
President and Chief Executive Officer
(Principal Executive Officer)

Date: March 16, 2018

CERTIFICATIONS

I, Richard H. Nance, certify that:

1. I have reviewed this Annual Report on Form 10-K of VirnetX Holding Corporation for the fiscal year ended December 31, 2017;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

/s/ Richard H. Nance
Richard H. Nance
Chief Financial Officer
(Principal Accounting and Financial Officer)

Date: March 16, 2018

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of VirnetX Holding Corporation (the "Company") on Form 10-K for the fiscal year ended December 31, 2017 as filed with the Securities and Exchange Commission on March 16, 2018 (the "Report"), I, Kendall Larsen, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

/s/ Kendall Larsen
Kendall Larsen
President and Chief Executive Officer
(Principal Executive Officer)

Date: March 16, 2018

**CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of VirnetX Holding Corporation (the "Company") on Form 10-K for the fiscal year ended December 31, 2017 as filed with the Securities and Exchange Commission on March 16, 2018 (the "Report"), I, Richard Nance, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and result of operations of the Company.

/s/ Richard H. Nance
Richard H. Nance
Chief Financial Officer
(Principal Accounting and Financial Officer)

Date: March 16, 2018
