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Identiv, Inc.
Form 10-K
March 15, 2019

UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

Form 10-K

ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2018

OR

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

For the transition period from _____ to _____

COMMISSION FILE NUMBER 0-29440

IDENTIV, INC.

(Exact Name of Registrant as Specified in its Charter)

Delaware
(State or other jurisdiction of
Incorporation or organization)

77-0444317
(I.R.S. Employer
Identification Number)

2201 Walnut Avenue, Suite 100, Fremont, California
(Address of Principal Executive Offices)

94538
(Zip Code)

Registrant's telephone number, including area code:

(949) 250-8888

Securities Registered Pursuant to Section 12(b) of the Act:

None

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Securities Registered Pursuant to Section 12(g) of the Act:

Common Stock, \$0.001 par value, and associated Preferred Share Purchase Rights

(Title of Class)

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

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

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

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

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

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

Large accelerated filer

Accelerated filer

Non-accelerated filer

Smaller reporting company

Emerging growth company

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

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

Based on the closing sale price of the Registrant's Common Stock on the Nasdaq National Market System on June 30, 2018, the last business day of the Registrant's most recently completed second fiscal quarter, the aggregate market value of Common Stock held by non-affiliates of the Registrant was \$51,267,400.

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At March 6, 2019, the Registrant had outstanding 16,424,911 shares of Common Stock, excluding 1,072,748 shares held in treasury.

DOCUMENTS INCORPORATED BY REFERENCE

Designated portions of the Company's Proxy Statement to be filed within 120 days after the Registrant's fiscal year end of December 31, 2018 are incorporated by reference into Part II, Item 5 and Part III of this Report.

Identiv, Inc.

Form 10-K

For the Fiscal Year Ended December 31, 2018

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PART I

ITEM 1. BUSINESS

Statement Regarding Forward Looking Statements

This Annual Report on Form 10-K (“Annual Report”), including the documents incorporated by reference in this Annual Report, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. For example, statements, other than statements of historical facts regarding our strategy, future operations and growth, financial position, projected results, estimated revenues or losses, projected costs, prospects, plans, market trends, product attributes and benefits, competition, objectives of management, management judgements and estimates, and the expected impact of changes in laws or accounting pronouncements constitute forward-looking statements. In some cases, you can identify forward-looking statements by terms such as “will,” “believe,” “could,” “should,” “would,” “may,” “anticipate,” “intend,” “plan,” “estimate,” “expect,” “project” or the negative of these terms or other similar expressions. Although we believe that our expectations reflected in or suggested by the forward-looking statements that we make in this Annual Report are reasonable, we cannot guarantee future results, performance or achievements. You should not place undue reliance on these forward-looking statements. All forward-looking statements speak only as of the date of this Annual Report. While we may elect to update forward-looking statements at some point in the future, we specifically disclaim any obligation to do so, even if our expectations change, whether as a result of new information, future events or otherwise. We also caution you that such forward-looking statements are subject to risks, uncertainties and other factors, not all of which are known to us or within our control, and that actual events or results may differ materially from those indicated by these forward-looking statements. We disclose some of the factors that could cause our actual results to differ materially from our expectations discussed elsewhere in this Annual Report. These cautionary statements qualify all of the forward-looking statements included in this Annual Report that are attributable to us or persons acting on our behalf.

Identiv and the Identiv logo are trademarks of Identiv, Inc., registered in many jurisdictions worldwide. Certain product and service brands are also trademarks or registered trademarks of the Company, including HIRSCH, ScramblePad, TouchSecure, Velocity, Freedom, Enterphone MESH, 3VR, VisionPoint, Thursby Software, and Thursby SubRosa. Other product and brand names not belonging to Identiv that appear in this document may be trademarks or registered trademarks of their respective owners.

Each of the terms the “Company,” “Identiv,” “we” and “us” as used herein refers collectively to Identiv, Inc. and its wholly-owned subsidiaries, unless otherwise stated.

Overview

Identiv, Inc. is a global provider of physical security and secure identification. Our products, software, systems, and services address the markets for physical and logical access control, video analytics and a wide range of Radio Frequency Identification (“RFID”)-enabled applications. Customers in government, enterprise, consumer, education, healthcare, banking, retail, transportation and other sectors rely on our security and identification solutions. Our mission is to make the physical world digital and secure. Our platform to deliver on our mission can be deployed through Internet of Things (“IoT”) devices, mobile, client/server, cloud, web, dedicated hardware and software-defined architectures. Our solutions encompass what we believe to be the most complete set of technologies in the industry. We are a one-stop shop for software delivering physical security management, video surveillance, logical access, analytics and identities; and devices spanning access readers, panels, processing appliances, and identity cards. We provide services to deliver optimized total solutions, serving as a single-point provider for our customers rather than several separate vendors that the customer would otherwise have to coordinate and manage.

The foundation of our business is our deep technical expertise across RFID, smart card technology, and physical security technologies from hardware to software. Our close customer relationships and analytics platforms allow us to develop customer-relevant products and applications. This is all underpinned by our core value of uncompromising quality.

To deliver these solutions, we have organized our operations into two reportable business segments, principally by solution families: Premises and Identity.

In the fourth quarter of 2018, we realigned the way in which we organize our operating segments in making operating decisions and assessing financial performance by combining our Identity and Credentials segments. The combined segment is now referred to as the Identity segment. All comparative segment information for fiscal 2017 has been combined to conform to the fiscal 2018 presentation.

Premises

The Premises segment includes our solutions to address the premises security market for government and enterprise, including access control, video surveillance, analytics, customer experience and other applications.

Our physical security platform is anchored by the Hirsch Velocity management software, our line of controllers including the advanced MX line, our TouchSecure access readers, a wide range of integrations and our Identiv Global Services team that develops optimized solutions for our customers' total business and security environment, incorporating our products and partner products that together best serve our customers' goals. We have further extended our physical access platform with our Identiv Connected Physical Access Manager ("ICPAM") software, derived from Cisco's Physical Access Manager ("CPAM") system.

In February 2018, we acquired 3VR Security, Inc. ("3VR"), a video technology and analytics company. With the acquisition, we added the 3VR video security and analytics platform, which is a natural complement to our physical access offering. Nearly all customers for access control are customers for video security, and vice versa. Additionally, the events and data generated by both platforms combine to create what we believe to be uniquely valuable information for our customers to provide frictionless yet robust security. 3VR's platform is architected as an analytics system, proven across applications in the retail, banking, and other vertical markets, and valuable to our physical security markets in government, education, critical infrastructure, transportation and others. In addition to technology, 3VR brought deep market presence, across over 170 banks, installations with over 50,000 cameras under our software's management, top-tier retailers, and a 100% U.S.-made platform.

In January 2019, we acquired substantially all assets of the Freedom, Liberty, and Enterphone™ MESH products and services of Viscount Systems, Inc. ("Viscount"). The web-based Freedom and Liberty access control and Enterphone MESH IP telephone entry solutions are known for their early adoption of a web, API-based, cloud-ready architecture, creating an IT-centric software-focused and hardware-light platform. Scaling from small- and medium-sized businesses ("SMB") up to enterprise scale for government and commercial markets, Freedom and the entry-level Liberty product line are complementary to our other products. With Freedom, customers can build integrated access control and video management systems under one centrally managed or distributed network, seamlessly integrating physical security devices such as card readers, ID management, Active Directory/LDAP, visitor entry, alarm points, and video applications and analytics. We believe the combination creates one of the most-advanced, IT-centric solutions for physical security, delivering a seamless evolution from traditional physical access models to next-generation, cloud and web-based, and mobile-enabled systems. Our TouchSecure ("TS") readers, TS Cards, VMS platform, mobile logical access and our Identiv Global Services ("IGS") services are applicable to nearly all Freedom and Liberty customers.

We sell either individual components or complete bundled solutions which can include any or all among software, edge controllers, IoT devices, multi-door panels, access readers, access cards, 3VR appliances and other components or services, some of which are detailed below:

Premises Software — Our software platform for premises security ranges from physical access to video analytics and business intelligence. The Hirsch Velocity software platform enables centralized management of access and security operations across an organization, including control of doors, gates, turnstiles, elevators and other building equipment, monitoring users as they move around a facility, preventing unwanted access, maintaining compliance and providing a robust audit trail. Velocity continues to be especially successful with federal and state government customers. The Freedom and Liberty platforms present an IT-centric and highly scalable alternative, specifically for the SMB market. We believe our ICPAM software platform is ideal for the Cisco and wider IT channel, and is tightly integrated with Cisco's VSM video management system as well as their IP telephony infrastructure. We believe our 3VR VisionPoint™ VMS (Video Management System) for real-time search is an ideal video management software for forensic search, case management and business intelligence. Available in both a Standard and Pro version, with an optional enterprise server for large and remote deployments, VisionPoint VMS provides tools to gather intelligence from video, speed up searches and easily develop cases. VisionPoint VMS can be installed on commercial off-the-shelf hardware, on certified partner hardware, and is included on any of 3VR's powerful NVR/HVR appliances.

Controllers — Our modular Hirsch MX controllers are designed to be scalable, allowing customers to start with a small system and expand over time. Hirsch MX controllers can operate autonomously, whether as a single controller or as part of a networked system with Velocity software. Our Freedom Crypto and IoT Bridges provide hardware-light

solutions, providing low-cost implementations and building a bridge to fully software-defined, hardware-light (or hardware-free) access platforms.

FICAM — We believe our Velocity, MX and TS Reader solution is the highest performance, lowest per-door cost access control system for the U.S. federal government security mandate known as the Federal Identity, Credential and Access Management (“FICAM”) architecture. Our solution brings all of the advantages above into the next generation of physical security for the U.S. government departments and agencies to achieve Federal Information Processing Standard (“FIPS”) 201 compliance. Similar to our leading Hirsch Velocity solution for the U.S. government market, the Freedom platform acquired from Viscount is also FICAM-compliant and allows customers to choose an evolutionary, alternative architecture going forward. Within FICAM, the most infrastructure-efficient architecture is a specification known as 13.02. With Freedom and Velocity, we now are the only vendor providing two 13.02-compliant solutions, and we represent half of the four 13.02 approved solutions at this time.

Access Readers — Our TS readers feature multiple layers of security based on a certified hardware security element. These door readers provide unique features to support a wide range of security standards. We support the majority of legacy cards with a robust next-generation platform that can help companies migrate to more secure credentials and technologies, including smart cards, near field communication ("NFC") and government-issued credentials including Common Access Card ("CAC"), Personal Identification Verification ("PIV"), Personal Identification Verification – Interoperable ("PIV-I") and others. Additionally, our Scramblepad readers employ numerical scrambling on the keypad to protect access codes from being stolen as they are entered, and providing both secure two-factor authentication and convenient alternative-factor access.

Identiv Global Services — Identiv Global Services provides a comprehensive catalog of end-to-end services that facilitates customer success, drives deeper adoption of our product portfolio and encourages long-term customer engagement. IGS supports customers throughout their premises security lifecycle from system design, to integration, deployment and managed services. IGS experts enable customers to address today's complex security and IT systems interoperability requirements, and helps them achieve a tailor-made solution.

Identity

The Identity segment includes our products and solutions enabling secure access to information serving the logical access and cyber security market and protecting assets and objects in the IoT with RFID.

Information security solutions range from securing enterprise information access and secure transactions across PCs, networks, mobile devices, email, login, secure payments, and printers via delivery of smart card reader products and applications.

Our information security products include smart card readers, which includes a broad range of contact, contactless, portable and mobile smart card readers, tokens and terminals that are utilized around the world to enable logical access (i.e., PC, network or data access) and security and identification applications, such as national ID, payment, e-Health and e-Government. Through our acquisition of Thursby Software Systems ("TSS") in November of 2018, as well as our internal product development, we provide mobile apps, software and systems to enable secure and convenient logical access across smart cards and derived credentials on Apple iOS and Android mobile devices. Our solutions include:

Mobile Security — TSS' software solutions provide strong security for enterprise and personal mobility, supporting bring-your-own-device ("BYOD") and two-factor authentication ("2FA") on mobile devices. We enable Department of Defense ("DoD") issued CAC, federally issued PIV cards, derived credentials, and commercially issued PIV-I cards to access, sign, encrypt, and decrypt information and emails from Apple iOS and Android mobile phones or tablet devices. These capabilities have allowed over a hundred thousand DoD and federal employees, including the U.S. Navy Reserve, via the Ready-2-Serve ("R2S") mobile application, to use personal and government-furnished mobile devices to access needed information on-the-go. Prior to the acquisition, TSS had sold more than one million software licenses to a range of customers and industries, including government, healthcare, finance, energy, education, research, Fortune 500, Global 2000, and original equipment manufacturers ("OEMs").

We have established a leading position as a trusted provider of convenient high-security solutions to government and enterprise customers. Our products are customizable to specific customer preferences, providing both high security and excellent end-user convenience. TSS' seamless support of both government-grade smart card deployments and derived credentials reflects our philosophy of supporting customers' adoption of technologies at their own pace, optimized for their own use cases.

Smart Card Readers — With over 20 years of smart card reader, application and token experience, and over 40 million smart card readers and modules deployed, we are known for our expertise in this complex ecosystem. We combine our deep technical expertise with an optimized supply chain, to provide what we believe to be the most optimal,

cost-effective and high-quality smart card-based reader products. Whether Identiv branded products, OEM branded, or embedded chips or modules, we are a trusted business solution provider for users and issuers of smart cards and embedded-chip applications.

Our RFID based solutions address a wide range of applications from access control to asset tracking, product authenticity, brand protection, customer engagement, tamper detection, product instrumentation, transportation access and other IoT applications. The RFID devices enable frictionless interaction with the physical world and are grouped into transponders and access cards.

Transponders — Our transponder products span the full range of high frequency (“HF”) and ultra-high frequency (“UHF”) technologies. Our differentiation is analogous to application-specific integrated circuits (“ASICS”) in the semiconductor market. We leverage our flexible platform, our deep technical expertise and our infrastructure and supply chain to deliver solutions optimized for our customers’ business goals. We believe we are more responsive, more flexible, more experienced in business-optimized solutions and have a better track record of sustained delivery of solution-specific, high-quality RFID devices than our competitors. These products are manufactured in our state-of-the-art facility in Singapore and are used in diverse physical applications, including electronic entertainment such as virtual reality (“VR”), games, loyalty cards, mobile payment systems, transit and event ticketing, brand authenticity from pharmaceuticals to consumer goods, hospital resource management, cold-chain management and many others.

Access Cards — Our uTrust cards encompass contactless single-technology, multi-technology, or credentials with a contact chip, including uTrust Proximity Credentials, uTrust Smart ID Secure Credentials, uTrust MIFARE Classic Credentials, and our uTrust TS Cards. This gives our customers easy access to RFID technology for reliable data exchange of physical access control system (PACS) data, up to options for versatile, high-frequency, interoperable, MIFARE-compatible smart cards. Our uTrust TS Cards address emerging security requirements while maintaining compatibility with existing low-security standards such as prox. We believe they offer the first complete solution to allow customers to pay only for the most basic low-frequency proximity access technology while having the ability to evolve to the higher-security high-frequency and highest-security public key infrastructure (“PKI”) based credentials. This product line exemplifies our values: we place no burden on our customers, instead providing what we believe to be the most cost-effective solution to their basic needs; and then delivering within this platform the ability for them to move to higher-level needs and capabilities, when they want, when they are ready and when they will realize economic and experience benefits.

Leveraging our expertise in RFID, physical access and physical authentication, we are developing new solutions to extend our platforms across a wide variety of physical use cases. The next major opportunity in our connected world is the IoT, which fundamentally is about physical things. We believe our core strength in physical access and physical instrumentation markets, our well-established platforms and our deep knowledge of the relevant technologies, position us well in this growth market.

Market Strategy

Our strategy is to drive growth by leveraging our core technology expertise delivered as the industry’s most complete single-vendor solution. We deliver current-architecture solutions to our mainstream customers, while providing cutting-edge capabilities to our early adopter customer. The result is a long term, trusted partnership with enduring customer relationships and therefore a high lifetime value with our customers.

We build on our experience addressing solutions across multiple markets, including government, transportation, healthcare, education, banking, retail, critical infrastructure and others. Our common advantages across all of our segments, in addition to a shared set of technologies and supply chain, is our more than 30 years of expertise and sustained reputation as the go-to source for what we believe to be the top-quality, most reliable, most cost-effective solution. We drive an intense commitment to our customers, to ensure we are delivering business-supporting solutions to them and honoring a straightforward, respectful, trustworthy and business-based relationship at all times, and for a long time. In each of our segments we have a long track-record within the industry, and this positions us as a trusted advisor, supplier and business partner.

In our Premises segment, we believe that our more than 30 years’ experience delivering physical security solutions to U.S. Government customers has provided us with significant expertise and a quality reputation. Our products enable compliance with federal directives and standards implemented over the past decade, including Homeland Security Presidential Directive (“HSPD”) 12 and FIPS 201, which defines a common standard known as the PIV credential, used by all U.S. Government employees and contractors. We are a leading supplier of physical access control solutions to both federal and state government customers, including agencies within the Department of Justice, Department of the Treasury, the FBI, U.S. Marshall and many others. As a pioneering adopter of physical security technologies and protocols employed on a large scale, the U.S. Government continues to demand the best of breed, which we have been delivering to an increasing range of agencies and departments.

Since the acquisition of 3VR, our video intelligence solutions provide a single platform for real-time security and customer insights, enabling organizations to protect employees, customers and assets as well as improve store operations and shopping experiences. Our new open, pluggable platform leverages existing customer infrastructure and allows customers to expand their systems’ capabilities seamlessly.

We develop and sell integrated physical security solutions to government and enterprise customers worldwide. Our systems integrate access control, video surveillance and analytics, intrusion detection, building management and other network-based systems using a wide range of access cards, including PIV cards, smart cards, RFID cards and biometrics in order to successfully secure facilities and resources.

Physical Security and Analytics

Our analytics platform is core to our overall strategy. Security technologies are generating vast amounts of real-time data, which in practice has often been unmanageable. That has meant a limited capability to show risks in advance, and that manual processing of vast amounts of data has relegated responses to post-facto, forensic uses. Even those uses have been limited because of the scale of the security data and the limitations of the existing platforms to effectively manage and turn it into useful, actionable information.

Our systems solve these problems for specific security applications, retail loss prevention, ATM fraud, loitering and other security risks. The same analytics are being used to turn this security data into business improvement applications. Since the infrastructure investment has been made for security purposes, costs for incremental systems to apply the data can be limited. We are doing this in such applications as queue line management, heat mapping, customer service, personnel training and other areas, which we believe will expand both within vertical applications and horizontally.

Since virtually all access control customers deploy video security, we believe the opportunity for a combined product with robust feature sets represents a substantial portion of the overall market, and makes the system more effective. Access control systems manage the most critical event in a security system: Access granted or access denied. Access control systems are based on rigorous identification of trusted people within an organization or a community. This provides the two critical ingredients for successful video security: A list of already-trusted people, as well as alarms and events to focus video attention and analytics where they are most relevant. Without this leverage, video is a massive data stream that is often unmanageable in real-time and cumbersome to sort through forensically.

As the market understands this need, some of the most progressive video companies have developed their own access control systems. And vice versa, some access control companies have developed video capabilities. We believe this approach of extending from one solution to the other has resulted in solutions with limited capabilities.

By combining access control and video security solutions, which developed and competed successfully as standalone products in each market, we believe we are establishing a comprehensive solution for our customers. First, our 3VR platform has been architected from the beginning as an analytics and forensics platform, not just as a video streaming and viewing system. Second, by deeply combining access authorization databases and events with video insights and events, a much narrower solution set is created, since authorized events and people are pre-known, and the remaining events are much easier to tag and respond to as possible security issues.

In addition to our core products, we have a range of product initiatives, partnerships and integrations designed to leverage leading technology advances across mobile, biometric, machine-learning and other areas, to provide convenient, frictionless, low-cost yet highly secure physical access. We invest independently and in partnership with other leading technology companies in these emerging aspects of physical security and analytics platforms.

Connecting the Complete Benefits of a Digitized Physical World: Secure Logical Access, Mobility and RFID

In addition to providing secure and frictionless premises solutions, in our Identity segment, we provide a broad range of smart card readers, tokens and terminals that enable security applications, including national ID cards, payment and eHealth and eGovernment. We have supplied millions of smart card readers to the Department of Defense and other federal agencies. Our mobile applications and readers allow users to securely authenticate on iOS™ or Android™ devices, using their CAC or PIV credentials. Through the acquisition of Thursby, we envision a growing number of government employees, military service personnel and commercial users with a complete and convenient BYOD secure mobile information access solution.

We also design and manufacture a broad range of NFC and RFID products across HF and UHF technologies, and from secure transactional devices to high-end microprocessor-based devices. We have expanded our solutions by incorporating advanced flexible, rechargeable battery technology to bring active-device capabilities to the Cold Chain market and opening the potential of active sensor-enabled applications. Our products are used in diverse applications, including electronic entertainment, loyalty schemes, mobile payment, transit and event ticketing, and others.

We believe that the know-how across RFID, NFC as well as smart card technology positions us to be the go-to provider for RFID and mobile applications utilizing NFC, HF, or UHF technology. We believe the capabilities we are developing in our engineering and research center in Germany provides a differentiator particularly in the advanced, microprocessor-enabled applications that are key to bringing digital benefits to physical things. Brand authenticity, counterfeiting and consumer engagement applications especially demand compliance with a high level of technical requirements as well as specific expectations around the appearance of the product, user experience and reliability. We believe our ability to provide high-quality pilot projects in small batches with rapid turnaround provides a substantial competitive advantage.

Positioned for Growth in Growing Markets

Leveraging our RFID, NFC and mobility expertise, we are bringing the benefits of the IoT to a wide range of physical, connected items. Market analysts estimate that by 2020 the number of physical things connected to the Internet will grow into the tens of billions. These will include household appliances, vehicles, medicines, home security systems, books, luggage, jewelry, toys and a host of other objects. We believe the growth of the IoT creates significant opportunities to provide physical access, authentication and identity into nearly every industry, worldwide. We are leveraging our physical access, video and analytics solutions as well as our RFID-based physical device-management expertise to provide leading solutions as our customers, and our customers' customers, embrace the IoT.

Customers

We sell to customers worldwide in a range of markets, including government, enterprise, consumer, financial services, healthcare and transportation. Sales to our ten largest customers accounted for 28% of total net revenue in 2018 and 33% of total net revenue in 2017. A significant amount of revenue is sourced from sales of products and systems to our OEM partners and an indirect sales network who sell to various entities within the U.S. federal government sector. U.S. federal government sales are primarily delivered through our OEM partners and an indirect sales network or are priced using published General Service Administration schedules.

Sales and Marketing

We primarily conduct our own sales and marketing activities in each of the markets in which we compete, utilizing our own sales and marketing organization to solicit prospective channel partners and customers, provide technical advice and support with respect to products, systems and services, and manage relationships with customers, distributors and/or OEMs. We sell our smart card readers and RFID/NFC products directly to end users and utilize indirect sales channels that may include OEMs, dealers, systems integrators, value added resellers, resellers or Internet sales. We sell our physical access control solutions and access card services primarily through systems integrators, dealers and value added partners, although we also sell directly to end users. In support of our sales efforts, we participate in trade shows and conduct sales training courses, targeted marketing programs, and ongoing customer, channel partner and third-party communications programs.

Competition

The market for security solutions is competitive and characterized by rapidly changing technology and evolving standards in the industry as a whole and within specific markets. We believe that competition for security solutions is likely to intensify as a result of an ongoing increase in demand for solutions that help converge physical and logical access control systems and RFID and NFC products to enable expansion of the connected world. The increase in competition will come from two additional factors. First, the vast growth of data being generated by high bandwidth security devices, especially video, as well as the increasing number of electronic-access doors. As data volumes become increasingly unmanageable with classic systems relying on monitoring by guards, real-time analytics and purpose-built forensic platforms will deliver these critical security results. Second, technically advanced hardware is moving into commercial markets, driven by volume cost curves as disruptive consumer and small and medium business focused startups launch commercial-scale capabilities into these high volume markets.

We believe we mitigate competitive risks with several strategies:

- Providing more complete solutions than many of our physical security competitors;
- Focusing on microprocessor-enabled applications of RFID technology further enhanced by our close partnerships with the major RFID microprocessor vendors;
- Our network of partnerships and integrations;
- Our broad IP base, including approximately 50 patents granted or pending;
- A trusted relationship with our customers, including a product range that permits us to build business around their preferred adoption rate, whether slow or fast. We believe many of our competitors do not proactively facilitate customers' progression to newer technologies, while other competitors seek to drive customers to abandon installed systems and leap to new platforms. We support our customers, with our own solutions, throughout this spectrum.

Competition for our smart card readers primarily comes from Gemalto NV and OMNIKEY/HID Global (a division of ASSA ABLOY AB), as well as from a number of smaller suppliers in Asia. Competition for our RFID products comes from a small number of competitors including SMARTRAC NV and a number of inlay conversion companies in Asia.

Access control and video solutions are available from multiple suppliers in a very fragmented market, where the top 7 providers represent under a third of the market. We primarily compete with Lenel Systems International, Software House, Gallagher Group Ltd., Honeywell International Inc., Exacq, Genetec and Milestone Systems.

We believe that the principal competitive factors affecting the market for our products, systems and solutions include:

- technical features;
- the ability of channel partners to effectively integrate multiple products and systems in order to address customer requirements including full system capabilities, cost of ownership and ease of use;

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- quality and reliability;
- the ability of suppliers to quickly develop new products and integrated solutions to satisfy new customer requirements;
- ease of use;
- strength of sales and distribution channels; and
- price and total cost of system ownership.

We believe that we compete favorably within our market environment, our ability to continue to successfully compete is subject to a variety of factors, as further discussed below in “Item 1A. Risk Factors” in this Annual Report on Form 10-K.

Backlog

We typically do not maintain a significant level of backlog and revenue in any quarter significantly depends on contracts entered into or orders received and shipped in that quarter. The majority of our sales are made primarily pursuant to purchase orders for current delivery or agreements covering purchases over a period of time. While our customer contracts generally do not require fixed long-term purchase commitments, from time to time we do enter into customer contracts where delivery of products, systems or services is ongoing or is scheduled over multiple quarters or years. In view of our order and shipment patterns, and because of the possibility of customer changes in delivery schedules or cancellation of orders, we do not believe that the ongoing arrangements we enter into provide meaningful backlog figures or are necessarily indicative of actual sales for any succeeding period.

Research and Development

We have made and continue to make significant investments in research and development. Research and development expenses were \$7.2 million in 2018 and \$6.1 million in 2017. We capitalized payroll related expenses related to development of our card issuance services of approximately \$29,000 and \$209,000 in 2018 and 2017, respectively. In addition, we capitalized \$401,000 of software development costs in 2017 for costs incurred subsequent to a product achieving technological feasibility and prior to the product’s general release to customers. No software development costs were capitalized in 2018.

Proprietary Technology and Intellectual Property

One of our core advantages is our proprietary technology. We currently rely on a combination of patent, copyright and trademark laws, trade secrets, confidentiality agreements and contractual provisions to protect our proprietary rights. Although we may seek to protect our proprietary technology through patents, it is possible that no new patents will be issued, that our proprietary products or technologies are not patentable, and that any issued patent will fail to provide us with any competitive advantages. The core of our proprietary technology advantage is the combination of our advanced technical expertise combined with our intimate customer knowledge, enabling us to develop bring to market and sometimes patent products uniquely positioned to deliver benefits to customers. This is an intellectual property advantage characterized both by trade secrets and unique relationships as well as formal patents.

We have a portfolio of approximately 30 patent families (designs, patents, utility models, patents pending and exclusive licenses) in individual or regional filings, covering products, electrical and mechanical designs, software systems and methods and manufacturing process ideas for our various businesses. Our issued patents expire between 2023 and 2038. We also submitted and have pending U.S. and foreign patent filings in RFID tags, converged access readers and systems, smart card manufacturing methods, authentication and NFC offerings. Additionally, we leverage our own ASIC designs for smart card interface in some of our reader devices.

Manufacturing and Sources of Supply

We utilize a combination of our own manufacturing facilities and the services of contract manufacturers in various countries around the world to manufacture our products and components. Our physical access keypads, controllers and software are manufactured primarily in California, using locally sourced components. Our video appliances are manufactured primarily in Wisconsin and Arizona. The majority of our smart card reader products and components are manufactured in Singapore, Cambodia and South Korea. Our RFID and NFC inlays and inlay-based products such as labels and tags are predominantly manufactured and assembled by our own internal manufacturing teams in Singapore primarily using locally sourced components and are certified to the ISO 9001:2015 and ISO 14001:2015 quality manufacturing standard.

We have implemented formal quality control programs to satisfy customer requirements for high quality and reliable products. To ensure that products manufactured by third parties are consistent with internal standards, our quality control programs include management of all key aspects of the production process, including establishing product specifications, selecting the components to be used to produce products, selecting the suppliers of these components and negotiating the prices for certain of these components. In addition, we may work with suppliers to improve process control and product design.

For the majority of our product manufacturing, we utilize a global sourcing strategy that serves all business solution areas within the company, which allows us to achieve economies of scale and uniform quality standards for our products and support higher gross margins.

On an ongoing basis, we analyze the need to add alternative sources for both our products and components. For example, we currently utilize the foundry services of external suppliers to produce our ASICs for smart cards readers and inlays, and we use chips and antenna components from third-party suppliers in our RFID and NFC inlays and contactless smart card readers. Wherever possible, we have qualified additional sources of supply for components.

Employees

As of December 31, 2018, we had 273 employees, of which 71 were in research and development, 86 were in sales and marketing, 34 were in general and administrative and 82 were in manufacturing and related functions. We are not subject to any collective bargaining agreements and, to our knowledge, none of our employees are currently represented by a labor union. To date, we have experienced no work stoppages and believe that our employee relations are generally good.

Corporate Information

Our corporate headquarters are located in Fremont, California. We maintain research and development facilities in California and Texas; Chennai, India; Munich, Germany; and local operations and sales facilities in Germany, the United Kingdom, Hong Kong, Singapore, India and the United States. We were founded in 1990 in Munich, Germany and incorporated in 1996 under the laws of the State of Delaware.

Legal Proceedings

On January 1, 2016, certain of our present and former officers and directors were named as defendants, and we were named as nominal defendant, in a shareholder derivative lawsuit filed in the United States District Court for the Northern District of California, entitled *Oswald v. Humphreys, et al.*, Case No. 16-cv-00241-CRB, alleging breach of fiduciary duty and waste claims. On January 25, 2016, certain of our present and former officers and directors were named as defendants, and we were named as nominal defendant, in a shareholder derivative lawsuit filed in the Superior Court of the State of California, County of Alameda, entitled *Chopra v. Hart, et al.*, Case No. RG16801379, alleging breach of fiduciary duty claims. On February 9, 2016, certain of our present and former officers and directors were named as defendants, and we were named as nominal defendant, in a shareholder derivative lawsuit filed in the Superior Court of the State of California, County of Alameda, entitled *Wollnik v. Wenzel, et al.*, Case No. HG16803342, alleging breach of fiduciary duty, corporate waste, gross mismanagement, and unjust enrichment claims. These lawsuits generally allege that we made false and/or misleading statements and/or failed to disclose information in certain public filings and disclosures between 2013 and 2015. Each of the lawsuits seeks one or more of the following remedies: unspecified compensatory damages, unspecified exemplary or punitive damages, restitution, declaratory relief, equitable and injunctive relief, and reasonable costs and attorneys' fees. On May 2, 2016, the court in the Chopra lawsuit entered an order staying proceedings in the Chopra lawsuit in favor of the Oswald lawsuit, based on a stipulation to that effect filed by the parties in the Chopra lawsuit on April 28, 2016. Similarly, on June 28, 2016, the court in the Wollnik lawsuit entered a stipulated order staying proceedings in the Wollnik lawsuit in favor of the Oswald lawsuit. On June 17, 2016, the plaintiff in the Oswald lawsuit filed an

amended complaint. On August 1, 2016, we filed a motion to dismiss for failure by plaintiff to make a pre-lawsuit demand on our board of directors, which motion was heard on October 14, 2016. The judge in the Oswald lawsuit issued an order on November 7, 2016 granting our motion to dismiss, without prejudice. In addition, the court stayed the case so that plaintiff could exercise whatever rights he had under Section 220 of the Delaware General Corporation Law. On or around November 30, 2016, the plaintiff purported to serve a books and records demand under Section 220 of the Delaware General Corporation Law. We responded to that demand. On March 21, 2017, we and the plaintiff in the Oswald lawsuit filed a stipulation and proposed order lifting the stay of the case, granting the plaintiff leave to amend, and setting a briefing schedule. The plaintiff in the Oswald lawsuit filed his second amended complaint on April 10, 2017. We then filed a motion to dismiss that second amended complaint on May 12, 2017. After further briefing and argument, on October 22, 2017, the court issued its written order denying the motion to dismiss on the basis of demand futility. On January 3, 2018, the court entered a stipulated order setting a response and briefing schedule for defendants to the second amended complaint.

Defendants filed motions to dismiss the second amended complaint in the Oswald action under Rule 12(b)(6) on January 16, 2018. After further briefing and argument, on April 13, 2018, the court entered an order granting defendants' motions to dismiss. On April 19, 2018, Plaintiff Oswald filed a motion for leave to file a third amended complaint. On that same date, Plaintiff Chopra, a plaintiff in a related and stayed derivative action in state court, filed a motion to intervene in the Oswald action. After further briefing and argument, on July 16, 2018, the court entered an order granting the Chopra motion to intervene and denying the Oswald motion for leave to file a third amended complaint. After the filing of an unopposed administrative motion for entry of judgment by defendants, on October 1, 2018, the court entered an order granting administrative motion for entry of final judgment and entered final judgment in favor of all named defendants and against plaintiffs Oswald and Chopra. On October 23, 2018, plaintiff Oswald filed a notice of appeal with the Ninth Circuit. Oswald's opening appellate brief was filed on March 4, 2019. In the interim, the state court Chopra and Wollnik actions have remained stayed with periodic status conferences. The next status conferences have been scheduled in the Chopra and Wollnik cases on November 5, 2019 before Judge Seligman. We intend to vigorously defend against these lawsuits. We cannot currently predict the impact or resolution of each of these lawsuits or reasonably estimate a range of possible loss, if any, which could be material, and the resolution of these lawsuits may harm our business and have a material adverse impact on our financial condition.

From time to time, we could become subject to claims arising in the ordinary course of business or could be named a defendant in additional lawsuits. The outcome of such claims or other proceedings cannot be predicted with certainty and may have a material effect on our financial condition, results of operations or cash flows.

Availability of SEC Filings

We make available through our website our Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q and Current Reports on Form 8-K and amendments to those reports free of charge as soon as reasonably practicable after we electronically file such reports with the Securities and Exchange Commission ("SEC"). Our Internet address is www.identiv.com. The content on our website is not, nor should it be deemed to be, incorporated by reference into this Annual Report. Our filings with the SEC are also available to the public through the SEC's website at www.sec.gov.

Item 1A. Risk Factors

The following discussion of risk factors contains forward-looking statements. These risk factors may be important to understanding any statement in this Form 10-K or elsewhere. The following information should be read in conjunction with Part II, Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations" and the consolidated financial statements and related notes in Part II, Item 8, "Financial Statements and Supplementary Data" of this Form 10-K.

Because of the following factors, as well as other factors affecting our financial condition and operating results, past financial performance should not be considered to be an indicator of future performance, and investors should not use historical trends to anticipate results or trends in future periods.

Our revenues and operating results are subject to significant fluctuations and such fluctuations may lead to a reduced market price for our stock.

Our revenues and operating results have varied in the past and will likely continue to fluctuate in the future. We believe that period-to-period comparisons of our operating results are not necessarily meaningful, but securities analysts and investors often rely upon these comparisons as indicators of future performance. If our operating results in any future period fall below the expectations of securities analysts and investors, or the guidance that we provide, the market price of our stock would likely decline.

Factors that have caused our results to fluctuate in the past and which are likely to affect us in the future include the following:

- business and economic conditions overall and in our markets;
- the timing and size of customer orders that may be tied to annual or other budgetary cycles, seasonal demand, product plans or program roll-out schedules;
- the effects of the U.S. Government shut downs, spending cuts and other changes in budget allocation or availability that create uncertainty for customers in certain parts of our business;
- the absence of significant backlog in our business;
- cancellations or delays of customer orders or the loss of a significant customer;
- the length of sales cycles associated with our product or service offerings;
- variations in the mix of products and services we sell;

- reductions in the average selling prices that we are able to charge due to competition or other factors;
- our ability to obtain an adequate supply of quality components and to deliver our products on a timely basis;
- our inventory levels and the inventory levels of our customers and indirect sales channels;
- the extent to which we invest in development, sales and marketing, and other expense categories;
- acquisitions, dispositions or organizational restructuring;
 - fluctuations in the value of foreign currencies against the U.S. dollar;
- the cost or impact of litigation; and
- the write-off of investments.

Estimating the amount and mix of future revenues is difficult, and our failure to do so accurately could affect our ability to be profitable or reduce the market price for our stock.

Accurately estimating future revenues is difficult because the purchasing patterns of our customers can vary depending upon a number of factors. We sell our smart card readers primarily through a channel of distributors who place orders on an ongoing basis depending on their customers' requirements. As a result, the size and timing of these orders can vary from quarter to quarter. Market demand for RFID and NFC technology is resulting in larger program deployments of these products and components, as well as increasing competition for these solutions. Across our business, the timing of closing larger orders increases the risk of quarter-to-quarter fluctuation in revenues. If orders forecasted for a specific group of customers for a particular quarter are not realized or revenues are not otherwise recognized in that quarter, our operating results for that quarter could be materially adversely affected. In addition, from time to time, we may experience an unexpected increase or decrease in demand for our products resulting from fluctuations in our customers' budgets, purchasing patterns or deployment schedules. These occurrences are not always predictable and can have a significant impact on our results in the period in which they occur.

Failure to accurately forecast customer demand may result in excess or obsolete inventory, which if written down might adversely impact our cost of revenues and financial condition.

In addition, our expense levels are based, in significant part, upon our expectations as to future revenues and are largely fixed in the short term. We may be unable to adjust spending in a timely manner to compensate for any unexpected shortfall in revenues. Any significant shortfall in revenues in relation to our expectations could have an immediate and significant effect on our operating results for that quarter and may lead to a reduced market price for our stock.

Our loan covenants may affect our liquidity or limit our ability to incur debt, make investments, sell assets, merge or complete other significant transactions.

On February 8, 2017, we entered into a Loan and Security Agreement with East West Bank ("EWB"). The Loan and Security Agreement, as amended, with EWB provides for a \$20.0 million revolving loan facility (the "Revolving Loan Facility"). Our obligations under the agreement are secured by substantially all of our assets. The Revolving Loan Facility contains customary representations and warranties and customary affirmative and negative covenants, including, limits or restrictions on our ability to incur liens, incur indebtedness, make certain restricted payments, merge or consolidate and dispose of assets. The Revolving Loan Facility also contains various financial covenants. In addition, the Revolving Loan Facility contains customary events of default that entitle EWB to cause any or all of our indebtedness under the Revolving Loan Facility to become immediately due and payable. The events of default (some of which are subject to applicable grace or cure periods), include, among other things, non-payment defaults, covenant defaults, cross-defaults to other material indebtedness, bankruptcy and insolvency defaults and material judgment defaults. Upon the occurrence and during the continuance of an event of default, EWB may terminate their lending commitments and/or declare all or any part of the unpaid principal of all loans, all interest accrued and unpaid thereon and all other amounts payable under the Loan and Security Agreement to be immediately due and payable. If repayment of the indebtedness is accelerated, we could face a substantial liquidity problem and may be forced to dispose of material assets or operations, seek to obtain equity capital, or restructure or refinance our indebtedness.

Such alternative measures may not be available or successful. Also, our loan covenants may limit our ability to dispose of material assets or operations or to restructure or refinance our indebtedness. Even if we are able to restructure or refinance our indebtedness, the economic terms may not be favorable to us. Any of the foregoing could have a material adverse effect on our financial condition and results of operations. Our ability to make periodic interest payments and to repay our debt when due depends on our financial and operating performance, which in turn, is subject to prevailing economic and competitive conditions and other factors. If our cash flow and capital resources are insufficient to fund our debt service obligations, we could face substantial liquidity problems and may be forced to dispose of material assets or operations, seek to obtain equity capital, or restructure or refinance our indebtedness. Such alternative measures may not be successful and may not permit us to meet our scheduled debt service obligations.

If we are not able to secure additional capital when needed, our business could be adversely affected.

We may seek or need to raise additional funds for general corporate and commercial purposes or for acquisitions. Our ability to obtain financing depends on our historical and expected future operating and financial performance, and is also subject to prevailing economic conditions and to financial, business and other factors beyond our control. If we are unable to secure additional financing when desired, our ability to fund our business operations, make capital expenditures, pursue additional expansion or acquisition opportunities, or have resources available to capitalize on other opportunities could be limited, and this could adversely impact our financial results. There can be no assurance that additional capital will be available to us on favorable terms or at all. The sale of additional debt or equity securities may cause dilution to existing stockholders. Any debt or equity securities issued may also provide for rights, preferences or privileges senior to those of our common stock and could impose significant restrictions on our operations. In addition, any capital we raise may be restricted with respect to use.

Acquisitions and strategic investments require substantial resources, expose us to significant risks and may adversely impact our business.

As part of our growth strategy, we seek to acquire or make investments in companies, products or technologies that we believe complement or augment our existing business, product offerings or technology portfolio. For example, on February 14, 2018, we acquired 3VR Security, Inc., or 3VR, a video technology and analytics company for \$6.2 million in cash, subordinated unsecured promissory notes and common stock. In addition, in the event that 3VR achieves specified levels of product shipments in 2018, we will be obligated to issue further earn-out consideration of \$3.5 million payable in shares of our common stock (subject to certain conditions) with a potential maximum earn-out value of \$7.0 million in the event that such shipments exceed \$48.2 million. Further, in calendar year 2019, we may also be obligated to pay, in cash, and subject to certain conditions, contingent consideration equal to the lesser of (A) 35% of the gross margin of certain products sold and services rendered by 3VR in 2018 pursuant to a supply arrangement and (B) \$25.0 million, each subject to adjustments.

In addition, on November 2, 2018, we acquired Thursby Software Systems, Inc., or Thursby, for \$3.1 million in cash, net of cash acquired, and common stock. Additionally, in the event that revenue from Thursby products is greater than \$8.0 million, \$11.0 million, or \$15.0 million in product shipments in 2019, we will be obligated to issue earn-out consideration of up to a maximum of \$7.5 million payable in shares of our common stock, subject to certain conditions. In the event that such revenue is less than \$15.0 million in 2019, but 2020 revenue from Thursby products exceeds \$15.0 million, we will be obligated to issue an additional \$2.5 million in earn-out consideration payable in shares of our common stock. The maximum total earn-out consideration payable for all periods is \$7.5 million in the aggregate, payable in shares of our common stock.

On January 2, 2019, we completed the purchase of substantially all the assets of the Freedom, Liberty, and Enterphone™ MESH products and services of Viscount Systems, Inc., or VSI, and the assumption of certain liabilities for \$3.2 million in cash and common stock. Additionally, in the event that revenue from the assets purchased under the agreement in 2019 is greater than certain specified revenue targets, we will be obligated to issue earn-out consideration of up to a maximum of \$3.5 million payable in shares of our common stock. In the event that such revenue targets are not met in 2019, but 2020 revenue from the assets purchased exceeds certain higher targets for 2020, then we will be obligated to issue up to a maximum of \$2.25 million in earn-out consideration payable in shares of our common stock.

Acquiring and integrating acquired businesses and assets into our business exposes us to certain risks.

Executing acquisition or investment transactions and assimilating personnel and operations from an acquired business may require significant attention and resources, which may divert the attention of our management and employees

from day-to-day operations and disrupt our business. This may adversely impact our results of operations. In addition, there can be no assurances that the expected benefits of any acquisitions will be achieved.

The costs associated with an acquisition may be significant, whether or not the acquisition transaction is successfully concluded. As a result, acquisition activities may reduce the amount of capital available to fund our business. To purchase another company or assets, we may be required to issue additional equity securities, which would result in additional dilution to our stockholders. Acquisitions may result in the assumption of additional liabilities or debt, including unanticipated liabilities, or charges to earnings for such items as amortization of purchased intangibles or in-process research and development expenses. Such liabilities, indebtedness or charges could have a material and adverse impact on our financial condition and results of operations. Acquisitions and strategic investments may also lead to substantial increases in non-current assets, including goodwill. Write-downs of these assets due to unforeseen business developments may materially and adversely impact our financial condition and results of operations.

Additionally, we have in the past acquired companies that we have subsequently divested, in some cases for less than we paid to acquire the companies. Such divestitures involve risks, such as difficulty separating out portions of or entire businesses, distracting our management and employees, potential loss of revenue and potentially disrupting customer relationships. We have and may again in the future incur significant costs associated with exit or disposal activities, related impairment charges, or both, if we exit or divest a business or product line. If we are not able to successfully integrate or divest products, technologies, or personnel from businesses that we acquire or divest, or if we are not able to realize the expected benefits of our acquisitions, divestitures, or strategic investments, our business and financial results could be adversely affected.

Impairment in the value of our goodwill or other intangible assets could have a material adverse effect on our operating results and financial condition.

We record goodwill and intangible assets at fair value upon the acquisition of a business. Goodwill represents the excess of amounts paid for acquiring businesses over the fair value of the net assets acquired. Goodwill and indefinite-lived intangible assets are evaluated for impairment annually, or more frequently if conditions warrant, by comparing the carrying value of a reporting unit to its estimated fair value. Intangible assets with definite lives are reviewed for impairment when events or circumstances indicate that their carrying value may not be recoverable. Declines in operating results, divestitures, sustained market declines and other factors that impact the fair value of a reporting unit could result in an impairment of goodwill or intangible assets and, in turn, a charge to net income. Any such charges could have a material adverse effect on our results of operations or financial condition.

Our business and reputation may adversely affected by information technology system failures or network disruptions.

We may be subject to information technology system failures and network disruptions. These may be caused by natural disasters, accidents, power disruptions, telecommunications failures, acts of terrorism or war, computer viruses, physical or electronic break-ins, or other events or disruptions. System redundancy may be ineffective or inadequate, and our disaster recovery planning may not be sufficient for all eventualities. Such failures or disruptions could compromise company or customer data and result in delayed or cancelled orders and expose us to liability. System failures and disruptions could also impede the manufacturing and shipping of products, delivery of online services, processing of transactions and reporting of financial results. In addition, any such failures or disruptions could harm our reputation.

Our success depends largely on the continued service and availability of key personnel.

Our future success depends on our ability to continue to attract, retain, and motivate our senior management as well as qualified technical personnel, particularly software engineers. Competition for these employees is intense and many of our competitors may have greater name recognition and significantly greater financial resources to better compete for these employees. If we are unable to retain our existing personnel, or attract and train additional qualified personnel, our growth may be limited. All of our key employees are employed on an “at will” basis, meaning either we or the employee may terminate their employment with us at any time. The loss of key employees could slow our product development processes and sales efforts or harm our reputation. Also, our low stock price may result in difficulty attracting and retaining personnel as equity incentives generally comprise a significant portion of our employee compensation. Further, restructurings and reductions in force that we have recently experienced may have a negative effect on employee morale and the ability to attract and retain qualified personnel.

Our business could be adversely affected by reductions or delays in the purchase of our products or services for government security programs in the United States and globally.

We derive a substantial portion of our revenues from indirect sales to U.S. federal, state and local governments and government agencies, as well as from subcontracts under federal government prime contracts. Large government programs are an important market for our business, as high-security systems employing physical access, smart card,

RFID or other access control technologies are increasingly used to enable applications ranging from authorizing building and network access for federal employees to paying taxes online, to citizen identification, to receiving health care. We believe that the success and growth of our business will continue to be influenced by our successful procurement of government business either directly or through our indirect sales channels. Accordingly, changes in government purchasing policies or government budgetary constraints, including government shutdowns, could directly affect our financial performance. Sales to government agencies and customers primarily serving the U.S. Government, including further sales pursuant to existing contracts, may be adversely affected by factors outside our control, such as the sequester, federal government shutdowns or other Congressional actions to reduce federal spending, and by adverse economic, political or market conditions. A reduction in current or future anticipated sales to the U.S. Government sector could harm our results of operations.

Additionally, we anticipate that an increasingly significant portion of our future revenues will come from government programs outside the U.S., such as electronic national identity, eGovernment and eHealth programs. We currently supply smart card readers, RFID products and credential provisioning and management solutions for various government programs in Europe, Asia and Australia and are actively targeting additional programs in these and other geographic areas. However, the allocation and availability of funding for such programs are often impacted by economic or political factors over which we have no control, and which may cause delays in program implementation, which could negatively impact our sales and results of operations.

Our revenues may decline if we cannot compete successfully in an intensely competitive market.

We target our products at the rapidly evolving market for security technologies. Many of our current and potential competitors have significantly greater financial, technical, marketing, purchasing and other resources than we do. As a result, our competitors may be able to respond more quickly to new or emerging technologies or standards and to changes in customer requirements. Our competitors may also be able to devote greater resources to the development, promotion and sale of products or solutions and may be able to deliver competitive products or solutions at a lower end user price.

We also experience indirect competition from certain of our customers who currently offer alternative products or solutions or are expected to introduce competitive offerings in the future. For example, in our Premises business, many of our dealer channel partners act as system integrators, providing installation and service, and therefore carry competitive lines of products and systems. This is a common practice within the industry as the integrators need access to multiple lines in order to support all potential service and user requirements. Depending on the technical competence of their sales forces, the comfort level of their technical staff with our systems and price pressures from customers, these integrators may choose to offer a competitor's product. There is also business pressure to provide some level of sales to all vendors to maintain access to a range of products and systems.

We believe that the principal competitive factors affecting the markets for our products and solutions include:

- the extent to which products and systems must support evolving industry standards and provide interoperability;
- the extent to which products are differentiated based on technical features, quality and reliability, ease of use, strength of distribution channels and price;
- the ability to quickly develop new products and solutions to satisfy new market and customer requirements; and
- the total cost of ownership including installation, maintenance and expansion capability of systems.

Increased competition and increased market volatility in our industry could result in lower prices, reduced margins or the failure of our product and service offerings to achieve or maintain market acceptance, any of which could have a serious adverse impact on our business, financial condition and results of operations.

Our percentage of revenue and customer concentration is significant in certain of our businesses.

Sales to our ten largest customers accounted for 28% of total net revenue in 2018 and 33% of total net revenue in 2017. No customer accounted for 10% or more of our total net revenue in 2018 or 2017. A significant amount of revenue is sourced from sales of products and systems to our original equipment manufacturer partners and an indirect sales network who sell to various entities within the U.S. federal government sector. We cannot guarantee that future reductions in U.S. Government budgets will not impact our sales to these government entities or that the terms of existing contracts will not be subject to renegotiation. Our loss of one or more significant customers could have a significant adverse impact on our business, financial condition and results of operations.

Our business will not be successful if we do not keep up with the rapid changes in our industry.

The market for security products and related services is characterized by rapid technological developments, frequent new product introductions and evolving industry standards. To be competitive, we have to continually improve the

performance, features and reliability of our products and services, particularly in response to competitive offerings, and quickly demonstrate the value of new products and services or enhancements to existing products and services. Our failure to develop and introduce new products and services successfully on a timely basis and to achieve market acceptance for such products and services could have a significant adverse impact on our business, financial condition and results of operations.

Security breaches, whether or not related to our products, could result in the disclosure of sensitive government information or private personal information that could result in the loss of clients and negative publicity.

Many of the systems we sell manage private personal information or protect sensitive information related to our customers in the government or commercial markets. A well-publicized actual or perceived breach of network or computer security in one of these systems, regardless of whether such a breach is attributable to our products, could adversely affect the market's perception of us and our products, and could result in the loss of customers, have an adverse effect on our reputation and reduce demand for our products.

As part of our technical support services, we agree, from time to time, to possess all or a portion of the security system database of our customers. This service is subject to a number of risks. For example, despite our security measures our systems may be vulnerable to cyber-attacks by hackers, physical break-ins and service disruptions that could lead to interruptions, delays or loss of data. If any such compromise of our security were to occur, it could be very expensive to correct, could damage our reputation and result in the loss of customers, and could discourage potential customers from using our services. We could also be liable for damages and penalties. Although we have not experienced attempted cyber or physical attacks, we may experience such attempts in the future. Our systems also may be affected by outages, delays and other difficulties. Our insurance coverage may be insufficient to cover losses and liabilities that may result from such events.

Sales of our products could decline and we could be subject to legal claims for damages if our products are found to have defects.

Despite our testing efforts, our products may contain defects that are not detected until after the products have been shipped. The discovery of defects or potential defects may result in damage to our reputation, delays in market acceptance of our products and additional expenditures to resolve issues related to the products' implementation. If we are unable to provide a solution to actual or potential product defects that is acceptable to our customers, we may be required to incur substantial costs for product recall, repair and replacement, or costs related to legal or warranty claims made against us.

The global nature of our business exposes us to operational and financial risks and our results of operations could be adversely affected if we are unable to manage them effectively.

We market and sell our products and solutions to customers in many countries around the world. To support our global sales, customer base and product development activities, we maintain offices and/or business operations in several locations around the world, including Germany, Hong Kong, India, Japan, Singapore and the U.S. We also maintain manufacturing facilities in Singapore and California and engage contract manufacturers in multiple countries outside the U.S. Managing our global development, sales, administrative and manufacturing operations places a significant burden on our management resources and our financial processes and exposes us to various risks, including:

- longer accounts receivable collection cycles;
- changes in foreign currency exchange rates;
- compliance with and changes in foreign laws and regulatory requirements;
- changes in political or economic conditions and stability, particularly in emerging markets;
- difficulties managing widespread sales and manufacturing operations;
- export controls;
- less effective protection of our intellectual property; and
- potentially adverse tax consequences.

Any failure to effectively mitigate these risks and effectively manage our global operations could have a material adverse effect on our business, financial condition or operating results.

A significant portion of our revenue is through an indirect sales channel, and the loss of dealers, systems integrators, resellers, or other channel partners could result in decreased revenue.

We currently use an indirect sales channel that includes dealers, systems integrators, value added resellers and resellers to sell a significant portion of our products and solutions, primarily into markets or to customers where the channel partner may have closer customer relationships or greater access than we do. Some of these channel partners also sell our competitors' products, and if they favor our competitors' products for any reason, they may fail to market our products as effectively or to devote necessary resources that result in sales of our products, which would cause our sales to suffer. Indirect selling arrangements are intended to benefit both us and the channel partner, and may be long- or short-term relationships, depending on market conditions, competition in the marketplace and other factors. If we are unable to maintain effective indirect sales channels, there could be a reduction in the amount of product we are able to sell, and our revenues could decrease.

We depend upon third-party manufacturers and a limited number of suppliers, and if we experience disruptions in our supply chain or manufacturing, our business may suffer.

We rely upon a limited number of suppliers for some key components of our products which exposes us to various risks, including whether or not our suppliers will provide adequate quantities with sufficient quality on a timely basis and the risk that supplier pricing may be higher than anticipated. In addition, some of the basic components used in some of our products, such as semiconductors, may at any time be in great demand. This could result in components not being available to us in a timely manner or at all, particularly if larger companies have ordered significant volumes of those components, or in higher prices being charged for components we require. Disruption or termination of the supply of components or software used in our products could delay shipments of our products, which could have a material adverse effect on our business and operating results and could also damage relationships with current and prospective customers.

Many of our products are manufactured outside the U.S. by contract manufacturers. Our reliance on these manufactures poses a number of risks, including lack of control over the manufacturing process and ultimately over the quality and timing of delivery of our products. If any of our contract manufacturers cannot meet our production requirements, we may be required to rely on other contract manufacturing sources or identify and qualify new contract manufacturers, and we may not be able to do this in a timely manner or on reasonable terms. Additionally, we may be subject to currency fluctuations, potentially adverse tax consequences, unexpected changes in regulatory requirements, tariffs and other trade barriers, export controls, or political and economic instability. Any significant delay in our ability to obtain adequate supplies of our products from our current or alternative manufacturers could materially and adversely affect our business and operating results. In addition, if we are not successful at managing the contract manufacturing process, the quality of our products could be jeopardized or inventory levels could be inadequate or excessive, which could result in damage to our reputation with our customers and in the marketplace, as well as possible shortages of products or write-offs of excess inventory.

Our U.S. Government business depends upon the continuance of regulations that require federal agencies to implement security systems such as ours, and upon our ability to receive certain government approvals or certifications and demonstrate compliance in government audits or investigations. A failure to receive these government approvals or certifications or a negative audit result could result in a material adverse impact on our business, financial condition and results of operations.

While we are not able to quantify the amount of sales made to end customers in the U.S. Government market due to the indirect nature of our selling process, we believe that orders from U.S. Government agencies represent a significant portion of our revenues. The U.S. Government, suppliers to the U.S. Government and certain industries in the public sector currently fall, or may in the future fall, under particular regulations that require federal agencies to implement security systems that utilize physical and logical access control products and solutions such as ours. These regulations include, but are not limited to HSPD 12 and FIPS 201 produced by the National Institute of Standards and Technology ("NIST"). Discontinuance of, changes in, or lack of adoption of laws or regulations pertaining to security related to sales to end customers in the U.S. Government market could adversely affect our sales.

Our U.S. Government business is also dependent upon the receipt of certain governmental approvals or certifications and failure to receive such approvals or certifications could have a material adverse effect on our sales in those market segments for which such approvals or certifications are customary or required. Government agencies in the U.S. and other countries may audit our business as part of their routine audits and investigations of government procurement programs. Based on the outcome of any such audit, if any of our costs are found to be improperly allocated to a specific order, those costs may not be reimbursed and any costs already reimbursed for such order may have to be refunded. If a government agency audit uncovers improper or illegal activities, we may be subject to civil and criminal penalties and administrative sanctions. A negative audit could materially affect our competitive position and result in a material adverse impact on our business, financial condition and results of operations.

Fluctuations in foreign exchange rates between the U.S. dollar and other major currencies in which we do business may adversely affect our business, financial condition and results of operations.

A significant portion of our business is conducted in foreign currencies, principally the euro and Indian Rupee. Fluctuations in the value of foreign currencies relative to the U.S. dollar will result in currency exchange gains and losses in our reported results. If a significant portion of operating expenses are incurred in a foreign currency such as the euro or Indian Rupee, and revenues are generated in U.S. dollars, exchange rate fluctuations might have a positive or negative net financial impact on these transactions, depending on whether the value of the U.S. dollar decreases or increases compared to that currency. In addition, the valuation of current assets and liabilities that are denominated in a currency other than the functional currency can result in currency exchange gains and losses. For example, when one of our subsidiaries uses the euro as the functional currency, and this subsidiary has a receivable in U.S. dollars, a devaluation of the U.S. dollar against the euro of 10% would result in a foreign exchange loss to the reporting entity of 10% of the value of the underlying U.S. dollar receivable. We cannot predict the effect of exchange rate fluctuations upon future operating results. The effect of currency exchange rate changes may increase or decrease our costs and/or revenues in any given period, and we may experience currency losses in the future. To date, we have not adopted a hedging program to protect against the risks associated with foreign currency fluctuations.

We may not be able to protect our intellectual property rights, which could make us less competitive and cause us to lose market share.

Our future success will depend, in part, upon our intellectual property rights and our ability to protect these rights. We rely on a combination of patent, copyright, trademark and trade secret laws, nondisclosure agreements and other contractual provisions to establish, maintain and protect our proprietary rights. From time to time we may be required to use litigation to protect our proprietary technology. This may result in our incurring substantial costs and we may not be successful in any such litigation. Despite our efforts to protect our proprietary rights, unauthorized third parties may copy aspects of our products, obtain and use information that we regard as proprietary, or infringe upon our patents. In addition, the laws of some foreign countries do not protect proprietary and intellectual property rights to the same extent as do the laws in the U.S. Because many of our products are sold and a significant portion of our business is conducted outside the U.S., our exposure to intellectual property risks may be higher. Our efforts to protect our proprietary and intellectual property rights may not be adequate. Additionally, there is a risk that our competitors will independently develop similar technology or duplicate our products or design around patents or other intellectual property rights. If we are unsuccessful in protecting our intellectual property or our products or technologies are duplicated by others, our competitive position could be harmed and we could lose market share.

We face risks from future claims of third parties and litigation, which could have an adverse effect on our results of operations.

From time to time, we may be subject to claims of third parties, possibly resulting in litigation, which could include, among other things, claims regarding infringement of the intellectual property rights of third parties, product defects, employment-related claims, and claims related to acquisitions, dispositions or restructurings. Addressing any such claims or litigation may be time-consuming and costly, divert management resources, cause product shipment delays, require us to redesign our products, require us to accept returns of products and to write-off inventory, or result in other adverse effects to our business. Any of the foregoing could have a material adverse effect on our results of operations and could require us to pay significant monetary damages.

We expect the likelihood of intellectual property infringement and misappropriation claims may increase as the number of products and competitors in the security market grows and as we increasingly incorporate third-party technology into our products. As a result of infringement claims, we could be required to license intellectual property from a third party or redesign our products. Licenses may not be offered when required or on acceptable terms. If we do obtain licenses from third parties, we may be required to pay license fees or royalties or we may be required to license some of our intellectual property to others in return for such licenses. If we are unable to obtain a license necessary for us or our third-party manufacturers to manufacture our allegedly infringing products, we could be required to suspend the manufacture of products or stop our suppliers from using processes that may infringe the rights of third parties. We may also be unsuccessful in redesigning our products. Our suppliers and customers may be subject to infringement claims based on intellectual property included in our products. We have historically agreed to indemnify our suppliers and customers for patent infringement claims relating to our products. The scope of this indemnity varies, but may, in some instances, include indemnification for damages and expenses, including attorney's fees. We may periodically engage in litigation as a result of these indemnification obligations. Our insurance policies exclude coverage for third-party claims for patent infringement.

Our stock price has been and is likely to remain volatile.

Over the past few years, The Nasdaq Capital Market has experienced significant price and volume fluctuations that have particularly affected the market prices of the stocks of technology companies. Volatility in our stock price may result from a number of factors, including, among others:

- low volumes of trading activity in our stock;
- technical trading patterns of our stock;

- variations in our or our competitors' financial and/or operational results;
- the fluctuation in market value of comparable companies in any of our markets;
- expected or announced news about partner relationships, customer wins or losses, product announcements or organizational changes;
- comments and forecasts by securities analysts;
- litigation developments; and
- general market downturns.

In the past, companies that have experienced volatility in the market price of their stock have been the object of securities class action litigation.

We have been named as a defendant in putative securities class action and derivative lawsuits. These lawsuits and other litigation could cause us to incur substantial expenses and divert our attention and resources.

Securities class action lawsuits have often been brought against a company following periods of volatility in the market price of its securities. Companies such as ours in the technology industry are particularly vulnerable to this kind of litigation due to the volatility of their stock prices. We and a number of our current and former officers and directors were defendants in a putative class action lawsuit that was dismissed without prejudice in March 2018 and are defendants in derivative litigation, which is discussed in the Section entitled “Legal Proceedings.” Any litigation to which we are a party has and may continue to result in the diversion of management attention and resources from our business and business strategy. In addition, any litigation to which we are a party may result in onerous or unfavorable judgments that may not be reversed upon appeal and that may require us to pay substantial monetary damages or fines, or we may decide to settle lawsuits on similarly unfavorable terms, which could have a material adverse effect on our business, financial condition or results of operations.

You may experience dilution of your ownership interests due to the future issuance of additional shares of our stock, and future sales of shares of our common stock could adversely affect our stock price.

We have issued a significant number of shares of our common stock, together with warrants to purchase shares of our common stock and convertible preferred stock, in connection with a number of financing transactions and acquisitions in recent years. In the future, from time to time we may issue additional previously authorized and unissued securities, resulting in additional dilution of the ownership interests of our current stockholders.

In addition, we have reserved shares of common stock for potential future issuance including stock issuable pursuant to our equity incentive plans, as contingent consideration related to previous acquisitions, the conversion of our preferred stock and warrants issued in connection with previous capital raises and other transactions. As of March 6, 2019, 1,975,041 shares of common stock are reserved for future grants and outstanding equity awards under our equity incentive plans and an additional 9,619,370 shares of common stock are reserved for future issuance in connection with other potential issuances. We may issue additional shares of common stock or other securities that are convertible into or exercisable for shares of common stock in connection with the hiring of personnel, future acquisitions, future financings or for other business purposes. If we issue additional securities, the aggregate percentage ownership of our existing stockholders will be reduced. In addition, any new securities that we issue may have rights senior to those of our common stock.

The issuance of additional shares of common stock or preferred stock or other securities, or the perception that such issuances could occur, may create downward pressure on the trading price of our common stock.

If current or future export laws limit or otherwise restrict our business, we could be prohibited from shipping our products to certain countries, which could cause our business, financial condition and results of operations to suffer.

Some of our products are subject to export controls or other laws restricting the sale of our products under the laws of the U.S., the European Union (“EU”) and other governments. The export regimes and the governing policies applicable to our business are subject to change. We cannot be certain that such export authorizations will be available to us or for our products in the future. In some cases, we rely upon the compliance activities of our prime contractors, and we cannot be certain they have taken or will take all measures necessary to comply with applicable export laws. If we or our prime contractor partners cannot obtain required government approvals under applicable regulations, we may not be able to sell our products in certain international jurisdictions.

Changes in tax laws or the interpretation thereof, adverse tax audits and other tax matters may adversely affect our future results.

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act (the “Tax Act”), which significantly changed prior U.S. tax law and includes numerous provisions that affect our business. Accounting for these provisions in fiscal 2017 required the use of provisional estimates in our financial statements, and the exercise of significant judgment in accounting for the Tax Act's provisions. As regulations and guidance evolve with respect to the Tax Act, and as we gather more information and perform more analysis, our results may materially differ from previous estimates, and those differences may materially affect our financial position. The net impact of such changes are uncertain, and could adversely affect our tax rate and cash flow in future years.

A number of other factors may impact our tax position as well, including:

- the jurisdictions in which profits are determined to be earned and taxed;
- the resolution of issues arising from tax audits with various tax authorities;
- changes in the valuation of our deferred tax assets and liabilities;

- adjustments to estimated taxes upon finalization of various tax returns;
- increases in expenses not deductible for tax purposes; and
- the repatriation of non-U.S. earnings for which we have not previously provided for U.S. taxes.

Any of these factors could make it more difficult for us to project or achieve expected tax results. An increase or decrease in our tax liabilities due to these or other factors could adversely affect our financial results in future periods.

We had a material weakness in our internal controls over financial reporting, and if we fail to maintain adequate internal control over financial reporting, our business could be materially and adversely affected.

Under the Sarbanes-Oxley Act, our management must establish, maintain and make certain assessments and certifications regarding our disclosure controls and internal controls over financial reporting. We have dedicated significant resources to comply with these requirements, including significant actions to develop, evaluate, and test our internal controls. A failure to maintain adequate internal controls could result in inaccurate or late reporting of our financial results, an investigation by regulatory authorities, a loss of investor confidence, a decrease in the trading price of our common stock and exposure to costly litigation or regulatory proceedings.

In connection with the audit of our financial statements as of and for the year ended December 31, 2015, we identified a material weakness in internal control over financial reporting during 2015. Management determined that the design and operating effectiveness of our controls over the financial statement close process related to the application of our accounting policies and the presentation of disclosures in the financial statements had been inadequate. Specifically, this material weakness arose from insufficient review and oversight of the recording of complex and non-routine transactions, including revenue transactions, due to an insufficient number of accounting personnel with appropriate knowledge, experience or training in U.S. GAAP. A similar material weakness was previously identified and disclosed in our Annual Reports on Form 10-K for the year ended December 2012 and 2013, and a remediation plan was implemented.

In 2016, a number of remediation actions and organizational changes were enacted to address specific control weaknesses identified, but the material weakness had not been fully remediated as of December 31, 2016. During the course of 2016, as part of our restructuring initiatives announced in the first quarter of 2016, we streamlined our global operations, transitioned to a single accounting system across substantially all our businesses, and strengthened our global accounting and finance function in Orange County, California. In 2017, we implemented procedures and controls over the financial statement close process, reallocated worldwide accounting resources, and continued to strengthen our accounting and finance team by hiring additional personnel with U.S. GAAP experience. Management has determined that with the remediation measures undertaken in 2016 and through June 30, 2017, the material weakness was fully remediated as of June 30, 2017. However, we may in the future identify additional internal control deficiencies that could rise to the level of a material weakness or uncover errors in our financial reporting, and any such material weaknesses in our internal controls could have a material adverse effect on the accuracy, timeliness and reliability of our financial reporting, which may have an adverse effect on our financial condition and results of operations as well as the price of our common stock.

Provisions in our charter documents and Delaware law may delay or prevent our acquisition by another company, which could decrease the value of your shares.

Our certificate of incorporation and bylaws and Delaware law contain provisions that could make it more difficult for a third party to acquire us or enter into a material transaction with us without the consent of our board of directors. These provisions include a classified board of directors and limitations on actions by our stockholders by written consent. Delaware law imposes some restrictions on mergers and other business combinations between us and any holder of 15% or more of our outstanding common stock. In addition, our board of directors has the right to issue preferred stock without stockholder approval, which could be used to dilute the stock ownership of a potential hostile acquirer. These provisions will apply even if the offer were to be considered adequate by some of our stockholders. Because these provisions may be deemed to discourage a change of control, they may delay or prevent the acquisition

of our company, which could decrease the value of our common stock.

ITEM 1B.UNRESOLVED STAFF COMMENTS

None.

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ITEM 2. PROPERTIES

Our corporate headquarters are located in Fremont, California and we maintain operational headquarters in Santa Ana, California. We lease additional facilities to house our engineering, sales and marketing, administrative and manufacturing functions. At December 31, 2018, our major facilities consisted of the following:

Location	Function	Square Feet	Lease Expiration
Fremont, California	Corporate headquarters	5,678	November 2020
Santa Ana, California	Administration; manufacturing; research and development	34,599	January 2023
Arlington, Texas	Administration; sales	5,700	October 2023
Sauerlach, Germany	European operations; research and development; sales	5,156	April 2020
Chennai, India	Research and development	17,500	October 2020
Singapore	RFID/NFC product manufacturing	16,060	May 2020

ITEM 3. LEGAL PROCEEDINGS

On January 1, 2016, certain of our present and former officers and directors were named as defendants, and we were named as nominal defendant, in a shareholder derivative lawsuit filed in the United States District Court for the Northern District of California, entitled *Oswald v. Humphreys, et al.*, Case No. 16-cv-00241-CRB, alleging breach of fiduciary duty and waste claims. On January 25, 2016, certain of our present and former officers and directors were named as defendants, and we were named as nominal defendant, in a shareholder derivative lawsuit filed in the Superior Court of the State of California, County of Alameda, entitled *Chopra v. Hart, et al.*, Case No. RG16801379, alleging breach of fiduciary duty claims. On February 9, 2016, certain of our present and former officers and directors were named as defendants, and we were named as nominal defendant, in a shareholder derivative lawsuit filed in the Superior Court of the State of California, County of Alameda, entitled *Wollnik v. Wenzel, et al.*, Case No. HG16803342, alleging breach of fiduciary duty, corporate waste, gross mismanagement, and unjust enrichment claims. These lawsuits generally allege that we made false and/or misleading statements and/or failed to disclose information in certain public filings and disclosures between 2013 and 2015. Each of the lawsuits seeks one or more of the following remedies: unspecified compensatory damages, unspecified exemplary or punitive damages, restitution, declaratory relief, equitable and injunctive relief, and reasonable costs and attorneys' fees. On May 2, 2016, the court in the Chopra lawsuit entered an order staying proceedings in the Chopra lawsuit in favor of the Oswald lawsuit, based on a stipulation to that effect filed by the parties in the Chopra lawsuit on April 28, 2016. Similarly, on June 28, 2016, the court in the Wollnik lawsuit entered a stipulated order staying proceedings in the Wollnik lawsuit in favor of the Oswald lawsuit. On June 17, 2016, the plaintiff in the Oswald lawsuit filed an amended complaint. On August 1, 2016, we filed a motion to dismiss for failure by plaintiff to make a pre-lawsuit demand on our board of directors, which motion was heard on October 14, 2016. The judge in the Oswald lawsuit issued an order on November 7, 2016 granting our motion to dismiss, without prejudice. In addition, the court stayed the case so that plaintiff could exercise whatever rights he had under Section 220 of the Delaware General Corporation Law. On or around November 30, 2016, the plaintiff purported to serve a books and records demand under Section 220 of the Delaware General Corporation Law. We responded to that demand. On March 21, 2017, we and the plaintiff in the Oswald lawsuit filed a stipulation and proposed order lifting the stay of the case, granting the plaintiff leave to amend, and setting a briefing schedule. The plaintiff in the Oswald lawsuit filed his second amended complaint on April 10, 2017. We then filed a motion to dismiss that second amended complaint on May 12, 2017. After further briefing and argument, on October 22, 2017, the court issued its written order denying the motion to dismiss on the basis of demand futility. On January 3, 2018, the court entered a stipulated order setting a response and

briefing schedule for defendants to the second amended complaint.

Defendants filed motions to dismiss the second amended complaint in the Oswald action under Rule 12(b)(6) on January 16, 2018. After further briefing and argument, on April 13, 2018, the court entered an order granting defendants' motions to dismiss. On April 19, 2018, Plaintiff Oswald filed a motion for leave to file a third amended complaint. On that same date, Plaintiff Chopra, a plaintiff in a related and stayed derivative action in state court, filed a motion to intervene in the Oswald action. After further briefing and argument, on July 16, 2018, the court entered an order granting the Chopra motion to intervene and denying the Oswald motion for leave to file a third amended complaint. After the filing of an unopposed administrative motion for entry of judgment by defendants, on October 1, 2018, the court entered an order granting administrative motion for entry of final judgment and entered final judgment in favor of all named defendants and against plaintiffs Oswald and Chopra. On October 23, 2018, plaintiff Oswald filed a notice of appeal with the Ninth Circuit. Oswald's opening appellate brief was filed on March 4, 2019. In the interim, the state court Chopra and Wollnik actions have remained stayed with periodic status conferences. The next status conferences have been scheduled in the Chopra and Wollnik cases on November 5, 2019 before Judge Seligman. We intend to vigorously defend against these lawsuits. We cannot currently predict the impact or resolution of each of these lawsuits or reasonably estimate a range of possible loss, if any, which could be material, and the resolution of these lawsuits may harm our business and have a material adverse impact on our financial condition.

From time to time, we could become subject to claims arising in the ordinary course of business or could be named a defendant in additional lawsuits. The outcome of such claims or other proceedings cannot be predicted with certainty and may have a material effect on our financial condition, results of operations or cash flows.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

Executive Officers of the Registrant

Information concerning our executive officers as of March 1, 2019 is as follows:

Steven Humphreys, 57, has served as our Chief Executive Officer since September 9, 2015 and as a director of the Company since July 1996. Mr. Humphreys previously served as Chairman of the Board from September 2013 until September 9, 2015. Previously, he also served as Lead Director from May 2010 until April 2013 and as Chairman of the Board from April 2000 to March 2007. Mr. Humphreys also served as an executive officer of the Company, as President from July 1996 to December 1996 and as President and Chief Executive Officer from January 1997 to July 1999. From November 2011 to December 2014, Mr. Humphreys served as chief executive officer of Flywheel Software, Inc., a venture-backed, location-based mobile solutions company. From October 2008 until its acquisition by SMSC in February 2011, Mr. Humphreys served as Chief Executive Officer and President of Kleer Corporation, a venture-backed provider of wireless audio technology. From October 2001 to October 2003, he served as Chairman of the Board and Chief Executive Officer of ActivIdentity, a provider of digital identity solutions, a publicly-listed company until its acquisition by HID Global in December 2010. He also served as a director of ActivIdentity from March 2008 until December 2010. Previously, Mr. Humphreys was President of Caere Corporation, a publicly-listed optical character recognition software company. Prior to Caere, he spent ten years with General Electric in a variety of factory automation and information technology positions, most recently leading the Information Delivery Services business unit of GE Information Services. Philanthropically, Mr. Humphreys has been an elected public school board trustee and a contributor to a range of education-oriented charities. He also serves on the board of Summit Public Schools, a charter school system with schools across the West Coast, and developer of the Summit Learning System, developed in cooperation with Facebook and deployed in over 1,000 schools nationwide. Mr. Humphreys holds a B.S. degree from Yale University and M.S. and M.B.A. degrees from Stanford University.

Sandra Wallach, 54, has served as our Chief Financial Officer since February 16, 2017. Ms. Wallach previously served as VP Finance for MiaSole, a thin film solar technology company, from May 2011 to January 2013. For a six month period from January 2013 to June 2013, she served as Chief Financial Officer of UBM Tech, a wholly-owned subsidiary of UBM LLC. In June 2013, she returned to MiaSole and served as their VP Finance until February 2017. Prior to that, she served as VP Finance at Juniper Networks (from 2008-2011) as well as holding different financial management positions with Intuit (2003-2007). Before joining Intuit, Ms. Wallach served as Chief Financial Officer of General Electric's (GE) Industrial Systems, Drives & Controls division. Previously she held a range of financial and management positions at General Electric since joining GE in 1986. Ms. Wallach holds a B.A. in Economics and Public Policy from the University of California at Berkeley.

PART II

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

Our common stock is traded on The Nasdaq Capital Market under the symbol "INVE." According to data available at March 6, 2019, we had 140 registered holders of our common stock. Not represented in this figure are individual stockholders in Germany whose custodian banks do not release stockholder information to us.

We have never declared or paid cash dividends on our common stock. We currently anticipate that we will retain all of our future earnings for use in the expansion and operation of our business and do not anticipate paying any cash dividends in the foreseeable future. In addition, our loan agreements with our lenders prohibit the payment of dividends.

The disclosure required by Item 201(d) of Regulation S-K is included in Item 12 of this Annual Report on Form 10-K.

During the years ended December 31, 2018 and 2017, we repurchased 141,670 shares and 178,207 shares, respectively, of common stock surrendered to us to satisfy tax withholding obligations in connection with the vesting of RSUs issued to employees.

ITEM 6. SELECTED FINANCIAL DATA

Not applicable.

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

This Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations," and other parts of this Annual Report on Form 10-K ("Annual Report") contain forward-looking statements, within the meaning of the Private Securities Litigation Reform Act of 1995, that involve risks and uncertainties. Forward-looking statements reflect current expectations of future events based on certain assumptions and include any statement that does not directly relate to any historical or current fact. Forward-looking statements can also be identified by words such as "will," "believe," "could," "should," "would," "may," "anticipate," "intend," "plan," "estimate," "expect," "project" or the negative terms or other similar expressions. Forward-looking statements are not guarantees of future performance and our actual results may differ significantly from the results discussed in the forward-looking statements. Factors that might cause such differences include, but are not limited to, those discussed in Part I, Item 1A of this Annual Report under the heading "Risk Factors," which are incorporated herein by reference. The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included in Part II, Item 8 of this Annual Report. We assume no obligation to revise or update any forward-looking statements for any reason, except as required by law.

Each of the terms the "Company," "Identiv," "we" and "us" as used herein refers collectively to Identiv, Inc. and its wholly-owned subsidiaries, unless otherwise stated.

Overview

Identiv, Inc. is a global provider of physical security and secure identification. Our products, software, systems, and services address the markets for physical and logical access control, video analytics and a wide range of Radio Frequency Identification ("RFID")-enabled applications. Customers in government, enterprise, consumer, education, healthcare, banking, retail, transportation and other sectors rely on our security and identification solutions. Our mission is to make the physical world digital and secure. Our platform to deliver on our mission can be deployed through Internet of Things ("IoT") devices, mobile, client/server, cloud, web, dedicated hardware and software-defined architectures. Our solutions encompass what we believe to be the most complete set of technologies in the industry. We are a one-stop shop for software delivering physical security management, video surveillance, logical access, analytics and identities; and devices spanning access readers, panels, processing appliances, and identity cards. We provide services to deliver optimized total solutions, serving as a single-point provider for our customers rather than several separate vendors that the customer would otherwise have to coordinate and manage.

We have organized our operations into two reportable business segments, principally by solution families: Premises and Identity. In the fourth quarter of 2018, we realigned the way in which we organize our operating segments in making operating decisions and assessing financial performance by combining our Identity and Credentials segments. The combined segment is now referred to as the Identity segment. All comparative segment information for fiscal 2017 has been reclassified to conform to the fiscal 2018 presentation.

Premises

The Premises segment includes our solutions to address the premises security market for government and enterprise, including access control, video surveillance, analytics, customer experience and other applications.

Our physical security platform is anchored by the Hirsch Velocity management software, our line of controllers including the advanced MX line, our TouchSecure access readers, a wide range of integrations and our Identiv Global Services team that develops optimized solutions for our customers' total business and security environment, incorporating our products and partner products that together best serve our customers' goals. We have further extended our physical access platform with our Identiv Connected Physical Access Manager ("ICPAM") software, derived from Cisco's Physical Access Manager ("CPAM") system.

In February 2018, we acquired 3VR Security, Inc. (“3VR”), a video technology and analytics company. With the acquisition, we added the 3VR video security and analytics platform, which is a natural complement to our physical access offering. Nearly all customers for access control are customers for video security, and vice versa. Additionally, the events and data generated by both platforms combine to create what we believe to be uniquely valuable information for our customers to provide frictionless yet robust security. 3VR’s platform is architected as an analytics system, proven across applications in the retail, banking, and other vertical markets, and valuable to our physical security markets in government, education, critical infrastructure, transportation and others. In addition to technology, 3VR brought deep market presence, across over 170 banks, installations with over 50,000 cameras under our software’s management, top-tier retailers, and a 100% U.S.-made platform.

In January 2019, we acquired substantially all assets of the Freedom, Liberty, and Enterphone™ MESH products and services of Viscount Systems, Inc. (“Viscount”). The web-based Freedom and Liberty access control and Enterphone MESH IP telephone entry solutions are known for their early adoption of a web, API-based, cloud-ready architecture, creating an IT-centric software-focused and hardware-light platform. Scaling from small- and medium-sized businesses (“SMB”) up to enterprise scale for government and commercial markets, Freedom and the entry-level Liberty product line are complementary to our other products. With Freedom, customers can build integrated access control and video management systems under one centrally managed or distributed network, seamlessly integrating physical security devices such as card readers, ID management, Active Directory/LDAP, visitor entry, alarm points, and video applications and analytics. We believe the combination creates one of the most-advanced, IT-centric solutions for physical security, delivering a seamless evolution from traditional physical access models to next-generation, cloud and web-based, and mobile-enabled systems. Our TouchSecure (“TS”) readers, TS Cards, VMS platform, mobile logical access and our Identiv Global Services (“IGS”) services are applicable to nearly all Freedom and Liberty customers.

We sell either individual components or complete bundled solutions which can include any or all among software, edge controllers, IoT devices, multi-door panels, access readers, access cards, 3VR appliances and other components or services, some of which are detailed below:

Premises Software — Our software platform for premises security ranges from physical access to video analytics and business intelligence. The Hirsch Velocity software platform enables centralized management of access and security operations across an organization, including control of doors, gates, turnstiles, elevators and other building equipment, monitoring users as they move around a facility, preventing unwanted access, maintaining compliance and providing a robust audit trail. Velocity continues to be especially successful with federal and state government customers. The Freedom and Liberty platforms present an IT-centric and highly scalable alternative, specifically for the SMB market. We believe our ICPAM software platform is ideal for the Cisco and wider IT channel, and is tightly integrated with Cisco’s VSM video management system as well as their IP telephony infrastructure. We believe our 3VR VisionPoint™ VMS (Video Management System) for real-time search is an ideal video management software for forensic search, case management and business intelligence. Available in both a Standard and Pro version, with an optional enterprise server for large and remote deployments, VisionPoint VMS provides tools to gather intelligence from video, speed up searches and easily develop cases. VisionPoint VMS can be installed on commercial off-the-shelf hardware, on certified partner hardware, and is included on any of 3VR’s powerful NVR/HVR appliances.

Controllers — Our modular Hirsch MX controllers are designed to be scalable, allowing customers to start with a small system and expand over time. Hirsch MX controllers can operate autonomously, whether as a single controller or as part of a networked system with Velocity software. Our Freedom Crypto and IoT Bridges provide hardware-light solutions, providing low-cost implementations and building a bridge to fully software-defined, hardware-light (or hardware-free) access platforms.

FICAM — We believe our Velocity, MX and TS Reader solution is the highest performance, lowest per-door cost access control system for the U.S. federal government security mandate known as the Federal Identity, Credential and Access Management (“FICAM”) architecture. Our solution brings all of the advantages above into the next generation of physical security for the U.S. government departments and agencies to achieve Federal Information Processing Standard (“FIPS”) 201 compliance. Similar to our leading Hirsch Velocity solution for the U.S. government market, the Freedom platform acquired from Viscount is also FICAM-compliant and allows customers to choose an evolutionary, alternative architecture going forward. Within FICAM, the most infrastructure-efficient architecture is a specification known as 13.02. With Freedom and Velocity, we now are the only vendor providing two 13.02-compliant solutions, and we represent half of the four 13.02 approved solutions at this time.

Access Readers — Our TS readers feature multiple layers of security based on a certified hardware security element. These door readers provide unique features to support a wide range of security standards. We support the majority of legacy cards with a robust next-generation platform that can help companies migrate to more secure credentials and technologies, including smart cards, near field communication (“NFC”) and government-issued credentials including

Common Access Card (“CAC”), Personal Identification Verification (“PIV”), Personal Identification Verification – Interoperable (“PIV-I”) and others. Additionally, our Scramblepad readers employ numerical scrambling on the keypad to protect access codes from being stolen as they are entered, and providing both secure two-factor authentication and convenient alternative-factor access.

Identiv Global Services — Identiv Global Services provides a comprehensive catalog of end-to-end services that facilitates customer success, drives deeper adoption of our product portfolio and encourages long-term customer engagement. IGS supports customers throughout their premises security lifecycle from system design, to integration, deployment and managed services. IGS experts enable customers to address today’s complex security and IT systems interoperability requirements, and helps them achieve a tailor-made solution.

Identity

The Identity segment includes our products and solutions enabling secure access to information serving the logical access and cyber security market and protecting assets and objects in the IoT with RFID.

Information security solutions range from securing enterprise information access and secure transactions across PCs, networks, mobile devices, email, login, secure payments, and printers via delivery of smart card reader products and applications.

Our information security products include smart card readers, which includes a broad range of contact, contactless, portable and mobile smart card readers, tokens and terminals that are utilized around the world to enable logical access (i.e., PC, network or data access) and security and identification applications, such as national ID, payment, e-Health and e-Government. Through our acquisition of Thursby Software Systems (“TSS”) in November of 2018, as well as our internal product development, we provide mobile apps, software and systems to enable secure and convenient logical access across smart cards and derived credentials on Apple iOS and Android mobile devices. Our solutions include:

Mobile Security — TSS’ software solutions provide strong security for enterprise and personal mobility, supporting bring-your-own-device (“BYOD”) and two-factor authentication (“2FA”) on mobile devices. We enable Department of Defense (“DoD”) issued CAC, federally issued PIV cards, derived credentials, and commercially issued PIV-I cards to access, sign, encrypt, and decrypt information and emails from Apple iOS and Android mobile phones or tablet devices. These capabilities have allowed over a hundred thousand DoD and federal employees, including the U.S. Navy Reserve, via the Ready-2-Serve (“R2S”) mobile application, to use personal and government-furnished mobile devices to access needed information on-the-go. Prior to the acquisition, TSS had sold more than one million software licenses to a range of customers and industries, including government, healthcare, finance, energy, education, research, Fortune 500, Global 2000, and original equipment manufacturers (“OEMs”).

We have established a leading position as a trusted provider of convenient high-security solutions to government and enterprise customers. Our products are customizable to specific customer preferences, providing both high security and excellent end-user convenience. TSS’ seamless support of both government-grade smart card deployments and derived credentials reflects our philosophy of supporting customers' adoption of technologies at their own pace, optimized for their own use cases.

Smart Card Readers — With over 20 years of smart card reader, application and token experience, and over 40 million smart card readers and modules deployed, we are known for our expertise in this complex ecosystem. We combine our deep technical expertise with an optimized supply chain, to provide what we believe to be the most optimal, cost-effective and high-quality smart card-based reader products. Whether Identiv branded products, OEM branded, or embedded chips or modules, we are a trusted business solution provider for users and issuers of smart cards and embedded-chip applications.

Our RFID based solutions address a wide range of applications from access control to asset tracking, product authenticity, brand protection, customer engagement, tamper detection, product instrumentation, transportation access and other IoT applications. The RFID devices enable frictionless interaction with the physical world and are grouped into transponders and access cards.

Transponders — Our transponder products span the full range of high frequency (“HF”) and ultra-high frequency (“UHF”) technologies. Our differentiation is analogous to application-specific integrated circuits (“ASICs”) in the semiconductor market. We leverage our flexible platform, our deep technical expertise and our infrastructure and supply chain to deliver solutions optimized for our customers’ business goals. We believe we are more responsive, more flexible, more experienced in business-optimized solutions and have a better track record of sustained delivery of solution-specific, high-quality RFID devices than our competitors. These products are manufactured in our

state-of-the-art facility in Singapore and are used in diverse physical applications, including electronic entertainment such as virtual reality (“VR”), games, loyalty cards, mobile payment systems, transit and event ticketing, brand authenticity from pharmaceuticals to consumer goods, hospital resource management, cold-chain management and many others.

Access Cards — Our uTrust cards encompass contactless single-technology, multi-technology, or credentials with a contact chip, including uTrust Proximity Credentials, uTrust Smart ID Secure Credentials, uTrust MIFARE Classic Credentials, and our uTrust TS Cards. This gives our customers easy access to RFID technology for reliable data exchange of physical access control system (PACS) data, up to options for versatile, high-frequency, interoperable, MIFARE-compatible smart cards. Our uTrust TS Cards address emerging security requirements while maintaining compatibility with existing low-security standards such as prox. We believe they offer the first complete solution to allow customers to pay only for the most basic low-frequency proximity access technology while having the ability to evolve to the higher-security high-frequency and highest-security public key infrastructure (“PKI”) based credentials. This product line exemplifies our values: we place no burden on our customers, instead providing what we believe to be the most cost-effective solution to their basic needs; and then delivering within this platform the ability for them to move to higher-level needs and capabilities, when they want, when they are ready and when they will realize economic and experience benefits.

Leveraging our expertise in RFID, physical access and physical authentication, we are developing new solutions to extend our platforms across a wide variety of physical use cases. The next major opportunity in our connected world is the IoT, which fundamentally is about physical things. We believe our core strength in physical access and physical instrumentation markets, our well-established platforms and our deep knowledge of the relevant technologies, position us well in this growth market.

For a discussion of our net revenue by segment and geographic location, see Note 13, Segment Reporting and Geographic Information, in the accompanying notes to our consolidated financial statements.

Trends in our Business

Geographic net revenue, based on each customer's ship-to location, for the years ended December 31, 2018 and 2017 is as follows (in thousands):

	Year Ended December 31,			
	2018	2017		
Americas	\$60,153	\$40,018		
Europe and the Middle East	9,943	7,887		
Asia-Pacific	8,046	12,314		
Total	\$78,142	\$60,219		
Americas	77	%	67	%
Europe and the Middle East	13	%	13	%
Asia-Pacific	10	%	20	%
Total	100	%	100	%

Net Revenue Trends

Net revenue in 2018 was \$78.1 million, an increase of 30% compared with \$60.2 million in 2017. Net revenue in our Premises segment, which accounted for 44% of our net revenue, was \$34.6 million in 2018, an increase of 43% compared with \$24.2 million in 2017. Net revenue in our Identity segment, which represented 56% of our net revenue, was \$43.6 million in 2018, an increase of 21% compared with \$36.1 million in 2017.

Net revenue in the Americas

Net revenue in the Americas was \$60.2 million in 2018, accounting for 77% of total net revenue, an increase of 50% compared with \$40.0 million in 2017. Net revenue from our Premises solution for security programs within various U.S. government agencies, as well as RFID and NFC products, inlays and tags represented approximately 51% of our net revenue in the Americas region.

Net revenue in our Premises segment in the Americas in 2018 increased 43% compared with 2017 primarily due to additional sales of video technology and analytics hardware and software products and related support services following the acquisition of 3VR in February 2018, as well as higher sales of physical access control solutions and

products and higher software product sales. Net revenue from our Identity segment increased 59% in 2018 compared with 2017 primarily due to additional sales of mobile security solution products, including a large bulk order of readers in the fourth quarter of 2018 to the U.S. Air Force following the acquisition of TSS in November 2018, and higher sales of smart card readers, access cards, and RFID and NFC transponder products.

As a general trend, U.S. Federal agencies continue to be subject to security improvement mandates under programs such as Homeland Security Presidential Directive (“HSPD”) 12 and reiterated in memoranda from the Office of Management and Budget (OMB M-11-11). We believe that our solution for trusted physical access is an attractive offering to help federal agency customers move towards compliance with federal directives and mandates. To expand our sales opportunities in the United States in general and with orders sourced from U.S. Government agencies in particular, we have strengthened our U.S. sales organization and our sales presence in Washington D.C.

Net revenue in Europe, the Middle East, and Asia-Pacific

Net revenue in Europe, the Middle East, and Asia-Pacific was approximately \$18.0 million in 2018, accounting for 23% of total net revenue, a decrease of 11% compared with 2017 primarily as a result of lower sales in the Asia-Pacific, partially offset by higher sales in the Europe and the Middle East regions. Net revenue in these regions are dependent on the completion of large projects and the timing of orders placed by some of our larger customers. Sales of Identity readers and RFID and NFC products and tags comprise a significant proportion of our net revenue in these regions.

Net revenue from our Premises products increased 49% in 2018 compared with 2017 due to higher sales of physical access control solutions in both the Europe and Middle East and the Asia-Pacific regions. Net revenue from our Identity products decreased approximately 20% in 2018 compared with 2017 primarily due to lower transponder product sales in the Asia-Pacific region and the effect of sales of smart card readers for a government project in the Asia-Pacific region in 2017. These decreases were partially offset by higher access card sales across both regions, and higher transponder product sales in the Europe and Middle East region. Identity reader sales in 2018 and 2017 comprised approximately 35% and 49% of the net revenue in the Europe and Middle East and the Asia-Pacific regions, respectively.

Seasonality and Other Factors

In our business overall, we may experience significant variations in demand for our offerings from quarter to quarter, and typically experience a stronger demand cycle in the second half of our fiscal year. Sales of our premises solutions to U.S. Government agencies are subject to annual government budget cycles and generally are highest in the third quarter of each year. However, the usual seasonal trend can be negatively impacted by actions such as government shutdowns and the passing of continuing resolutions which can act to delay the completion of certain projects. Sales of our identity reader chips, many of which are sold to government agencies worldwide, are impacted by testing and compliance schedules of government bodies as well as roll-out schedules for application deployments, both of which contribute to variability in demand from quarter to quarter. Further, this business is typically subject to seasonality based on differing commercial and global government budget cycles. Lower sales are expected in the U.S. in the first half, and in particular the first quarter of the year, with higher sales typically in the second half of each year. In Asia and Australia, with fiscal year-ends in March and June, order demand can be high in the first half as customers attempt to complete projects before the end of their fiscal year. Accordingly, our net revenue levels in the first quarter and first half each year often depend on the relative strength of project completions and sales mix between our U.S. customer base and our international customer base.

In addition to the general seasonality of demand, overall U.S. Government expenditure patterns have a significant impact on demand for our products due to the significant portion of revenues that are typically sourced from U.S. Government agencies. Therefore, any significant reduction in U.S. Government spending could adversely impact our financial results and could cause our operating results to fall below any guidance we provide to the market or below the expectations of investors or security analysts.

Operating Expense Trends

Base Operating Expenses

Our base operating expenses (i.e., research and development, selling and marketing, and general and administrative) increased 28% in 2018 compared with 2017. Research and development expense increased by 18% in 2018 compared with 2017 resulting from additional headcount and external contractor costs associated with the acquisition of 3VR in the first quarter of 2018. Selling and marketing expense in 2018 increased by 22% compared with 2017, due to the additional headcount and related costs, higher external services and contractor costs, and the amortization of acquired intangibles associated with the acquisition of 3VR in the first quarter of 2018. General and administrative spending in 2018 increased by 49% compared with 2017 primarily due to higher transaction related costs associated with the acquisition of 3VR in February of 2018, and the effect of reimbursements received in 2017 from our insurance provider for legal fees incurred in connection with matters related to a complaint by a former employee, related investigations, the class and derivative litigation and related proceedings.

Results of Operations

The following table includes segment net revenue and segment net profit information by business segment and reconciles gross profit to results of operations before income taxes and noncontrolling interest.

	Year Ended December 31,	
	2018	2017
Premises:		
Net revenue	\$34,587	\$24,154
Gross profit	19,373	13,669
Gross profit margin	56 %	57 %
Identity:		
Net revenue	43,555	36,065
Gross profit	13,959	8,491
Gross profit margin	32 %	24 %
Total:		
Net revenue	78,142	60,219
Gross profit	33,332	22,160
Gross profit margin	43 %	37 %
Operating expenses:		
Research and development	7,235	6,146
Selling and marketing	16,391	13,452
General and administrative	10,824	7,241
Restructuring and severance	747	(49)
Total operating expenses	35,197	26,790
Loss from operations	(1,865)	(4,630)
Non-operating income (expense):		
Interest expense, net	(1,518)	(2,590)
Loss on extinguishment of debt, net	(1,369)	(788)
Foreign currency gains (losses), net	204	(358)
Loss before income taxes and noncontrolling interest	\$(4,548)	\$(8,366)

The following table sets forth our statements of operations as a percentage of net revenue for the periods indicated (in thousands):

	Year Ended December 31,	
	2018	2017
Net revenue	100.0%	100.0%
Cost of revenue	57.3	63.1
Gross profit	42.7	36.9
Operating expenses:		
Research and development	9.3	10.2
Selling and marketing	21.0	22.3
General and administrative	13.9	11.9

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Restructuring and severance	1.0	(0.1)
Total operating expenses	45.0	44.4
Loss from operations	(2.3)	(7.5)
Non-operating income (expense)		
Interest expense, net	(1.9)	(4.3)
Loss on extinguishment of debt, net	(1.8)	(1.3)
Foreign currency gains (losses), net	0.3	(0.6)
Loss before income taxes and noncontrolling interest	(5.7)	(13.7)
Income tax (provision) benefit	(0.2)	0.4
Loss before noncontrolling interest	(5.9)	(13.3)
Less: Net loss attributable to noncontrolling interest	—	—
Net loss attributable to Identiv, Inc. stockholders' equity	(5.9)%	(13.3)%

Fiscal 2018 Compared with Fiscal 2017

Net Revenue

Net revenue in 2018 was \$78.1 million, up 30% compared with \$60.2 million in 2017. Net revenue was higher in 2018 driven by higher sales across both segments.

Net revenue in our Premises segment of \$34.6 million in 2018 increased 43% from \$24.2 million in 2017. The increase was primarily due to additional sales of video technology and analytics hardware and software products and related support services following the acquisition of 3VR in February 2018, as well as higher sales of physical access control solutions, higher sales through our channel partners, and higher software licensing sales.

Net revenue in our Identity segment of \$43.6 million in 2018 increased 21% from \$36.1 million in 2017 primarily due to additional sales of mobile security solution products, including a large bulk order of readers in the fourth quarter of 2018 to the U.S. Air Force, following the acquisition of TSS in November 2018, and higher access card product sales.

Gross Profit

Gross profit for 2018 was \$33.3 million, or 43% of net revenue, compared to \$22.2 million or 37% of net revenue in 2017. Gross profit represents revenues less direct cost of product sales, manufacturing overhead, other costs directly related to preparing the product for sale including freight, scrap, inventory adjustments and amortization, where applicable.

In our Premises segment, gross profit on sales of physical access control solutions, including panels, controllers, access readers, and sales of video technology and analytics hardware and software products, and related support services, was \$19.4 million in 2018 and \$13.7 million in 2017. Gross profit margins in the Premises segment were comparable in 2018 at 56% compared with 57% in 2017.

In our Identity segment, gross profit on sales of physical access credentials and authenticity and tracking applications, information readers and modules as well as credential provisioning and management services was \$14.0 million in 2018 compared with \$8.5 million in 2017. Gross profit margins in the Identity segment in 2018 were 32% compared to 24% in 2017 primarily due to a large bulk order of readers in the fourth quarter of 2018 to the U.S. Air Force, and a transponder related inventory reserve adjustment recorded in the fourth quarter of 2017 associated with a customer relationship which ended at the end of 2015 and our decision to discontinue plans for alternate use of the product.

We expect there will be some variation in our gross profit from period to period, as our gross profit has been and will continue to be affected by a variety of factors, including, without limitation, competition, product pricing, the volume of sales in any given quarter, manufacturing volumes, product configuration and mix, the availability of new products, product enhancements, software and services, risk of inventory write-downs and the cost and availability of components.

Operating Expenses

Information about our operating expenses for the years ended December 31, 2018 and 2017 is set forth below.

Research and Development

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	Year Ended December 31,			
	2018	2017	\$ Change	% Change
	(\$ in thousands)			
Research and development expenses	\$7,235	\$6,146	\$ 1,089	17.7 %
Percentage of revenue	9 %	10 %		

Research and development expenses consist primarily of employee compensation and fees for the development of hardware, software and firmware products. We focus the bulk of our research and development activities on the continued development of existing products and the development of new offerings for emerging market opportunities.

Research and development expenses in 2018 increased compared with 2017 primarily due to additional headcount and external contractor costs associated with the acquisition of 3VR in the first quarter of 2018.

Selling and Marketing

	Year Ended December 31,				
	2018	2017	\$	%	
	Change				Change
	(\$ in thousands)				
Selling and marketing expenses	\$16,391	\$13,452	\$2,939	21.8	%
Percentage of revenue	21	%	22	%	

Selling and marketing expenses consist primarily of employee compensation as well as amortization expense of certain intangible assets, tradeshow participation, advertising and other marketing and selling costs.

Selling and marketing expenses in 2018 increased compared with 2017 primarily due to additional headcount and related costs, higher external service provider and contractor costs, and the amortization of acquired intangibles associated with the acquisition of 3VR in the first quarter of 2018.

General and Administrative

	Year Ended December 31,				
	2018	2017	\$	%	
	Change				Change
	(\$ in thousands)				
General and administrative expenses	\$10,824	\$7,241	\$3,583	49.5	%
Percentage of revenue	14	%	12	%	

General and administrative expenses consist primarily of compensation expenses for employees performing administrative functions, and professional fees incurred for legal, auditing and other consulting services.

General and administrative expenses increased primarily due to \$1.0 million in transaction related costs associated primarily with the acquisitions of 3VR in February 2018 and TSS in November 2018, and the impact of reimbursements received of \$1.0 million in 2017 from our insurance provider for legal fees incurred in connection with matters related to a complaint by a former employee, related investigations, the class and derivative litigation and related proceedings.

Restructuring and Severance Charges

	Year Ended December 31,				
	2018	2017	\$	%	
	Change				Change
	(\$ in thousands)				
Restructuring and severance	\$747	\$(49)	\$796	N/A	

Restructuring and severance expenses in 2018 consisted primarily of facility rental related costs of \$0.3 million and severance related costs of \$0.3 million associated with the acquisition of 3VR. In the third quarter of 2018, we entered into an agreement with a tenant to sublease the newly acquired 3VR office facility over the remaining term of the original lease. In addition, in the fourth quarter of 2018, we recorded a restructuring accrual of \$0.1 million for our future rental payment obligation associated with vacated office space at our Fremont, California facility.

In 2017, we recorded a credit resulting from actual expenditures being less than originally accrued associated with the worldwide restructuring plan implemented in the first quarter of 2016.

See Note 14, Restructuring and Severance, in the accompanying notes to our consolidated financial statements for more information.

Non-operating Income (Expense)

Information about our non-operating income (expense) for the years ended December 31, 2018 and 2017 is set forth below.

Interest Expense, Net

	Year Ended December 31,			
	2018	2017	\$ Change	% Change
	(\$ in thousands)			
Interest expense, net	\$(1,518)	\$(2,590)	\$ 1,072	(41.4)%
Loss on extinguishment of debt, net	\$(1,369)	(788)	\$(581)	73.7 %

Interest expense, net consists of interest on financial liabilities and interest accretion expense for a liability to a long-term payment obligation arising from our acquisition of Hirsch Electronics Corporation. The lower net interest expense in 2018 is primarily attributable to the \$5.0 million principal pay down of our \$10.0 million term loan payable to Venture Lending & Leasing VII, Inc. and Venture Lending & Leasing VIII, Inc. (collectively referred to as “VLL7 and VLL8”) in December 2017, and the subsequent repayment of the remaining principal amounts outstanding of \$5.0 million in May 2018.

The loss on extinguishment of debt in 2017 consists of a gain on extinguishment of debt of \$1.0 million associated with the repayment of all amounts outstanding under our previous debt facility with a lender in the first quarter of 2017, and a loss on extinguishment of debt of \$1.8 million related to the pay down of \$5.0 million of the \$10.0 million outstanding term loan payable to VLL7 and VLL8. The loss on extinguishment of debt in 2018 represents the difference between the reacquisition price of the remaining amounts outstanding under our term loan with VLL7 and VLL8 and its net carrying amount.

See Note 7, Long-Term Payment Obligation and Note 8, Financial Liabilities, in the accompanying notes to our consolidated financial statements for more information.

Foreign Currency Gains (Losses), Net

	Year Ended December 31,			
	2018	2017	\$ Change	% Change
	(\$ in thousands)			
Foreign currency gains (losses), net	\$ 204	\$(358)	\$ 562	(157.0)%

Changes in currency valuation in the periods mainly were the result of exchange rate movements between the U.S. dollar, the Indian Rupee, and the Euro. Our foreign currency gains and losses primarily result from the valuation of current assets and liabilities denominated in a currency other than the functional currency of the respective entity in the local financial statements.

Income Taxes

Year Ended December 31,	
2018	2017

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			\$	%
			Change	Change
		(\$ in thousands)		
Income tax (provision) benefit	\$(155)	\$214	\$(369)	(172.4)%

Our tax rate is affected by recurring items, such as tax rates in foreign jurisdictions and the relative amount of income (loss) we earn in jurisdictions. It is also affected by discrete items that may occur in any given year, but are not consistent from year to year. The following items had the most significant impact on the difference between our statutory U.S. federal income tax rates of 21% and 34% and our effective tax rate in 2018 and 2017.

2018 – A decrease of \$1.1 million, or 25.1%, to the statutory rate resulted from changes in the valuation allowance during the year. An increase of \$0.2 million, or 4.9%, resulted from rate differences between U.S. and non-U.S. jurisdictions and a true-up of foreign income tax payables. Significant jurisdictions causing this difference were Germany and Singapore. No U.S. taxes were provided on foreign 2018 earnings/losses as these earnings are intended to be indefinitely reinvested outside the United States. No GILTI tax was provided with respect to earnings of foreign subsidiaries due to a net foreign tested loss position. The net effect of all changes was an income tax provision of \$0.2 million recorded in 2018.

2017 – A reduction of \$15.8 million, or 188.6%, to the statutory rate resulted from revaluation of federal deferred tax assets and liabilities due to the change in the federal enacted rate from 34% to 21%. An increase of \$13.9 million, or 166.5%, to the statutory rate resulted from changes in the valuation allowance during the year, including a corresponding change in the valuation allowance due to revaluation of deferred tax assets and liabilities referred to above. A reduction of \$0.7 million, or 8.2%, resulted from rate differences between U.S. and non-U.S. jurisdictions and a true-up of foreign income tax payables. Significant jurisdictions causing this difference were Germany and Singapore. No U.S. taxes were provided on foreign 2017 earnings/losses as these earnings are intended to be indefinitely reinvested outside the United States. No repatriation tax was provided with respect to undistributed earnings of foreign subsidiaries due to a net foreign earnings and profits deficit position. The net effect of all changes was an income tax benefit of \$0.2 million recorded in 2017.

Liquidity and Capital Resources

As of December 31, 2018, our working capital, defined as current assets less current liabilities, was \$12.7 million, a decrease of \$10.3 million compared to \$23.0 million as of December 31, 2017. As of December 31, 2018, our cash balance was \$10.9 million.

On February 8, 2017, we entered into Loan and Security Agreements (each, a “Loan and Security Agreement”) with East West Bank (“EWB”) and VLL7 and VLL8. The Loan and Security Agreement with EWB, as amended, provides for a \$16.0 million revolving loan facility, and the Loan and Security Agreement with VLL7 and VLL8 provided for a term loan in an aggregate principal amount of \$10.0 million. In connection with the closing of both Loan and Security Agreements, we repaid all outstanding amounts under our credit agreement with our previous lender. See Note 8, Financial Liabilities, in the accompanying notes to our consolidated financial statements for more information.

On December 28, 2017, we paid down an aggregate principal amount of \$5.0 million of the \$10.0 million outstanding principal balance of the term loan under the Loan and Security Agreement with VLL7 and VLL8, and \$0.9 million of accrued and unpaid interest outstanding at the prepayment date, together with all the scheduled interest that would have accrued and been payable through the stated maturity of the term loan. On May 31, 2018, we repaid the remaining amounts payable under the term loan of approximately \$5.2 million, consisting of \$4.6 million in outstanding principal, and \$0.6 million of accrued and unpaid interest outstanding at the prepayment date together with all the scheduled interest that would have accrued and been payable through the stated maturity of the term loan. See Note 8, Financial Liabilities, in the accompanying notes to our consolidated financial statements for more information.

On February 6, 2019, we entered into an amendment (the “Tenth Amendment”) to our Loan and Security Agreement with EWB. Under the Tenth Amendment, the revolving loan facility under the Loan and Security Agreement was increased from \$16.0 million to \$20.0 million, the interest rate was reduced from prime rate plus 1.0% to prime rate plus 0.75%, the maturity date was extended to February 8, 2021, and certain financial covenants were amended, including covenants with respect to minimum EBITDA levels. See Note 8, Financial Liabilities, in the accompanying notes to our consolidated financial statements for more information.

On December 20, 2017, we entered into a Securities Purchase Agreement with each of 21 April Fund, Ltd. and 21 April Fund, LP (collectively, the “Purchasers”), in which we, through a private placement, agreed to issue and sell an aggregate of up to 5,000,000 shares of Series B non-voting convertible preferred stock. The Purchasers purchased an aggregate of 3,000,000 preferred shares at a price of \$4.00 per share in cash at the initial closing of the transaction. On May 30, 2018, we completed the second closing of the private placement of 2,000,000 preferred shares at a price of \$4.00 per share. The total purchase price paid to us was \$20,000,000, of which \$12,000,000 was paid at the initial closing and \$8,000,000 at the second closing. We are required to use the proceeds from the issuance of the preferred shares to pay off existing debt obligations and to fund future acquisitions of technology, business and other assets. See

Note 9, Stockholders' Equity, in the accompanying notes to our consolidated financial statements for more information.

As our previously unremitted earnings have been subjected to U.S. federal income tax, we expect any repatriation of these earnings to the U.S. would not incur significant additional taxes related to such amounts. However, our estimates are provisional and subject to further analysis. Generally, most of our foreign subsidiaries have accumulated deficits and cash and cash equivalents that are held outside the United States are typically not cash generated from earnings that would be subject to tax upon repatriation if transferred to the United States. We have access to the cash held outside the United States to fund domestic operations and obligations without any material income tax consequences. As of December 31, 2018, the amount of cash included at such subsidiaries was \$1.3 million. We have not, nor do we anticipate the need to, repatriate funds to the United States to satisfy domestic liquidity needs arising in the ordinary course of business, including liquidity needs associated with our domestic debt service requirements.

We have historically incurred operating losses and negative cash flows from operating activities, and we may continue to incur losses in the future. As of December 31, 2018, we had a total accumulated deficit of \$404.4 million. During the year ended December 31, 2018, we had a net loss of \$4.7 million.

We believe our existing cash balance, together with cash generated from operations and available credit under our Loan and Security Agreement, will be sufficient to satisfy our working capital needs to fund operations for the next twelve months. We may also use cash to acquire or invest in complementary businesses, technologies, services or products that would change our cash requirements. We may also choose to finance our cash requirements through public or private equity offerings, debt financings or other arrangements. However, there can be no assurance that additional capital, if required, will be available to us or that such capital will be available to us on acceptable terms. If we raise funds by issuing equity securities, dilution to stockholders could result. Any equity securities issued also may provide for rights, preferences or privileges senior to those of holders of our common stock. The terms of debt securities issued or borrowings could impose significant restrictions on our operations. The incurrence of additional indebtedness or the issuance of certain equity securities could result in increased fixed payment obligations and could also result in restrictive covenants, such as limitations on our ability to incur additional debt or issue additional equity, limitations on our ability to acquire or license intellectual property rights and other operating restrictions that could adversely affect our ability to conduct our business. Our Loan and Security Agreement imposes restrictions on our operations, increases our fixed payment obligations and has restrictive covenants. In addition, the issuance of additional equity securities by us, or the possibility of such issuance, may cause the market price of our common stock to decline. If we are not able to secure additional funding when needed, we may have to curtail or reduce the scope of our business or forgo potential business opportunities.

The following summarizes our cash flows for the years ended December 31, 2018 and 2017 (in thousands):

	Year Ended December 31,	
	2018	2017
Net cash used in operating activities	\$(5,196)	\$(7,711)
Net cash used in investing activities	(3,373)	(967)
Net cash provided by financing activities	808	17,956
Effect of exchange rates on cash and cash equivalents	(425)	658
Net (decrease) increase in cash and cash equivalents	(8,186)	9,936
Cash and cash equivalents, beginning of year	19,052	9,116
Cash and cash equivalents, end of year	\$10,866	\$19,052

Cash flows from operating activities

Cash used in operating activities for 2018 was primarily due to the net loss of \$4.7 million and a decrease in cash from net changes in operating assets and liabilities of \$8.2 million, offset by adjustments for certain non-cash items of \$7.7 million, consisting primarily of depreciation, amortization, amortization of debt issuance costs, loss on extinguishment of debt, and stock-based compensation. For 2017, cash used in operating activities primarily was due to the net loss of \$8.2 million and decreases in cash from net changes in operating assets and liabilities of \$6.7 million which was partially offset by adjustments for certain non-cash items of \$7.1 million, which primarily consisted of depreciation, amortization, amortization of debt issue costs, stock-based compensation and a loss on extinguishment of debt, net.

Cash flows from investing activities

Cash used in investing activities during 2018 was \$3.4 million, of which \$2.0 million related to the acquisitions of 3VR and TSS, net of cash acquired, and \$1.3 million related to capital expenditures. For 2017, cash used in investing activities reflects \$1.0 million in capital expenditures.

Cash flows from financing activities

Cash provided by financing activities during 2018 related primarily to borrowings of debt, net of issuance costs, of \$21.8 million, and issuance of \$7.9 million of Series B preferred stock, net of issuance costs, offset by repayments of debt of \$28.2 million and taxes paid related to net share settlement of restricted stock units of \$0.7 million. Cash used in financing activities during 2017 related to borrowings of debt, net of issuance costs, of \$53.0 million, proceeds from the sale of our common stock, net of issuance costs, of \$12.6 million, and the issuance of Series B preferred stock, net of issuance costs, of \$11.9 million, offset by repayments of debt of \$58.7 million and taxes paid related to net share settlement of restricted stock units of \$0.8 million

Off-Balance Sheet Arrangements

We have not entered into off-balance sheet arrangements, or issued guarantees to third parties.

Contractual Obligations

The following summarizes expected cash requirements for contractual obligations as of December 31, 2018 (in thousands):

		Less than 1	1-3	3-5	More than 5
	Total	Year	Years	Years	Years
Operating leases	\$7,333	\$2,210	\$4,590	\$ 533	\$ —
Contractual payment obligation	3,038	1,266	1,772	—	—
Revolving loan facility	11,579	11,579	—	—	—
Promissory note	2,000	2,000	—	—	—
Purchase commitments and other obligations	12,846	11,046	1,350	450	—
Total obligations	\$36,796	\$28,101	\$7,712	\$ 983	\$ —
Subleases	\$(2,592)	\$(779)	\$(1,813)	\$—	\$ —

Our contractual payment obligation was assumed upon our acquisition of Hirsch. See Note 7, Long-Term Payment Obligation, in the accompanying notes to our consolidated financial statements.

Revolving loan facility contractual obligations include payments to be made for principal and interest in accordance with the terms at December 31, 2018 of the revolving loan facility under our Loan and Security Agreement. See Note 8, Financial Liabilities, in the accompanying notes to our consolidated financial statements.

We lease facilities, certain equipment, and automobiles under non-cancelable operating lease agreements. Purchases for inventories are highly dependent upon forecasts of customer demand. Due to the uncertainty in demand from our customers, we may have to change, reschedule, or cancel purchases or purchase orders from our suppliers. These changes may lead to vendor cancellation charges on these orders or contractual commitments. See Note 16, Commitments and Contingencies, in the accompanying notes to our consolidated financial statements.

Our other long-term liabilities include gross unrecognized tax benefits, and related interest and penalties. At this time, we are unable to make a reasonably reliable estimate of the timing of payments in individual years in connection with these tax liabilities. Accordingly, such amounts are not included in the contractual obligation table above.

Critical Accounting Policies

Our consolidated financial statements have been prepared in accordance with generally accepted accounting principles in the United States ("U.S. GAAP"). The preparation of these financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. Management bases its estimates and judgments on historical experience and on various other factors which we believe are reasonable based upon the information available to us at the time these estimates, judgments and assumptions are made. Actual results may differ from these estimates under different assumptions or conditions.

Revenue Recognition

We recognize revenue when we transfer control of the promised products or services to our customers, in an amount that reflects the consideration we expect to receive in exchange for those products or services. We enter into contracts that can include various combinations of our products, software licenses, and services, which are generally capable of being distinct and accounted for as separate performance obligations. For contracts with multiple performance obligations, we allocate the transaction price of the contract to each performance obligation, generally on a relative basis using its standalone selling price. The stated contract value is generally the transaction price to be allocated to the separate performance obligations. Revenue is recognized net of any taxes collected from our customers that are subsequently remitted to governmental authorities.

Nature of Products and Services

We derive our revenues primarily from sales of hardware products, software licenses, professional services, software maintenance and support, and extended hardware warranties.

Hardware Product Revenues — We generally have two performance obligations in arrangements involving the sale of hardware products. The first performance obligation is to transfer the hardware product (which includes software integral to the functionality of the hardware product). The second performance obligation is to provide assurance that the product complies with its agreed-upon specifications and is free from defects in material and workmanship for a period of one to three years (i.e. assurance warranty). The entire transaction price is allocated to the hardware product and is generally recognized as revenue at the time of delivery because the customer obtains control of the product at that point in time. We have concluded that control generally transfers at that point in time because the customer has title to the hardware, physical possession, and a present obligation to pay for the hardware. None of the transaction price is allocated to the assurance warranty component, as we account for these product warranty costs in accordance with Accounting Standards Codification (“ASC”) Topic 460, Guarantees. Payments for hardware contracts are generally due 30 to 60 days to after shipment of the hardware product.

Software License Revenues — Our license arrangements grant customers the perpetual right to access and use the licensed software products at the outset of an arrangement. Technical support and software updates are generally made available throughout the term of the support agreement, which is generally one to three years. We account for these arrangements as two performance obligations: (1) the software licenses, and (2) the related updates and technical support. The software license revenue is recognized upon delivery of the license to the customer, while the software updates and technical support is recognized over the term of the support contract. Payments are generally due 30 to 60 days after delivery of the software licenses.

Professional Services Revenues — Professional services revenues consist primarily of programming customization services performed relating to the integration of our software products with our customers other systems, such as HR systems. Professional services contracts are generally billed on a time and materials basis and revenue is recognized as the services are performed. For contracts billed on a fixed price basis, revenue is recognized once the contract is complete. Payments for services are generally due when services are performed.

Software Maintenance and Support Revenues — Support and maintenance contract revenues consist of the services provided to support the specialized programming applications performed by our professional services group. Support and maintenance contracts are typically billed at inception of the contract and recognized as revenue over the contract period, typically over a one to three year to period.

Extended Hardware Warranties Revenues — Sales of our hardware products may also include optional extended hardware warranties, which typically provide assurance that the product will continue function as initially intended. Extended hardware warranty contracts are typically billed at inception of the contract and recognized as revenue over the respective contract period, typically over one to two year periods after the expiration of the original assurance warranty.

Significant Judgments

Our contracts with customers often include promises to transfer multiple products and services to a customer. For such arrangements, we allocate the transaction price to each performance obligation based on relative standalone selling price (“SSP”). Judgment is required to determine the SSP for each distinct performance obligation in a contract. For the majority of items, we estimate SSP using historical transaction data. We use a range of amounts to estimate SSP when we sell each of our products and services separately and need to determine whether there is a discount to be allocated based on the relative SSP of the various products and services. In instances where SSP is not directly observable, such as when the product or service is not sold separately, we determine the SSPs using information that may include market conditions and other observable inputs. The determination of SSP is an ongoing process and information is reviewed regularly in order to ensure SSPs reflect the most current information or trends.

Contract Balances

Amounts invoiced in advance of services being provided are accounted for as deferred revenue. Nearly all of our deferred revenue balance is related software maintenance contracts. Payment terms and conditions vary by contract type, although payment is typically due within 30 to 90 days of contract inception. In instances where the timing of revenue recognition differs from the timing of invoicing, we have determined our contracts do not include a significant financing component. The primary purpose of our invoicing terms is to provide customers with simplified and predictable ways of purchasing our products and services, not to receive financing from our customers.

Inventory Valuation

Inventories are stated at the lower of cost (using average cost or standard cost, as applicable) or market (net realizable value). We typically plan our production and inventory levels based on internal forecasts of customer demand, which can be highly unpredictable and can fluctuate significantly. We regularly review inventory quantities on hand and record an estimated provision for excess inventory reserve based on judgment and assumptions involving an evaluation of technical obsolescence and our ability to sell based primarily on historical sales patterns and expectations for future demand. Actual demand and market conditions may differ from the projections utilized by management in establishing our inventory reserves. If we were to use different assumptions or utilize different estimates, the amount and timing of our inventory reserves could be materially different. Adverse changes in our inventory reserve valuations could have a material effect on our operating results and financial position.

Income Taxes

Our income tax expense, deferred tax assets and liabilities, and reserves for unrecognized tax benefits reflect management's assessment of estimated current and future income taxes to be paid. We are subject to income taxes in the United States and in numerous foreign jurisdictions. Significant judgments and estimates are required in determining the consolidated income tax expense, deferred tax assets and liabilities and reserves for unrecognized tax benefits.

Deferred tax assets and liabilities arise from temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements, which are expected to result in taxable or deductible amounts in the future. In evaluating our ability to recover our deferred tax assets within the jurisdiction from which they arise, for all material jurisdictions, we consider all available positive and negative evidence, including scheduled reversals of deferred tax balances, projected future taxable income, tax-planning strategies and results of recent operations. In projecting future taxable income, we begin with historical results and incorporate assumptions about the amount of future state, federal and foreign pretax operating income adjusted for items that do not have tax consequences. The assumptions about future taxable income require significant judgment and are consistent with the plans and estimates we use to manage the underlying businesses. In evaluating the objective evidence that historical results provide, we consider three years of cumulative operating results.

As of December 31, 2018, we have federal and state income tax net operating loss ("NOL") carryforwards of \$117.4 million and \$63.8 million, respectively, which will expire at various dates. Such NOL carryforwards expire as follows (in thousands):

Years	Amounts
2018 - 2023	\$36,943
2024 - 2029	16,023
2030 - 2035	45,719
2036 - 2040	18,813
Total	\$117,498

We believe that it is more likely than not that the benefit from these NOL carryforwards will not be realized. Accordingly, we have provided a full valuation allowance on any potential deferred tax assets relating to these state NOL carryforwards. If our assumptions change and we determine we will be able to realize these NOLs, the tax benefits relating to any reversal of the valuation allowance on deferred tax assets as of December 31, 2018, will be accounted for as a reduction of income tax expense.

The calculation of our tax liabilities involves evaluating uncertainties in the application of complex tax laws and regulations in a multitude of jurisdictions across our global operations. ASC Topic 740, Income Taxes (“ASC 740”) states that a tax benefit from an uncertain tax position may be recognized when it is more likely than not that the position will be sustained upon examination, including the resolution of any related appeals or litigation processes, on the basis of the technical merits.

We record unrecognized tax benefits as liabilities in accordance with ASC 740 and adjust these liabilities when our judgment changes as a result of the evaluation of new information not previously available. Because of the complexity of some of these uncertainties, the ultimate resolution may result in a tax payment that is materially different from our current estimate of the unrecognized tax benefit liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which new information is made available.

We believe that none of the unrecognized tax benefits, excluding the associated interest and penalties, which are insignificant, may be recognized by the end of 2018.

We consider the earnings of all our non-U.S. subsidiaries to be indefinitely invested outside the United States on the basis of estimates that future domestic cash generation will be sufficient to meet future domestic cash needs and our specific plans for reinvestment of those subsidiary earnings. Should we decide to repatriate foreign earnings, we would need to adjust our income tax provision in the period we determined that the earnings will no longer be indefinitely invested outside the United States.

Goodwill, Intangible Assets and Long-lived Assets

Business combinations. We allocate the purchase price of acquired businesses to the tangible and identifiable intangible assets acquired and liabilities assumed based on their estimated fair values on the acquisition date. Any residual purchase price is recorded as goodwill. Goodwill is allocated to reporting units expected to benefit from the business combination. The allocation of purchase price requires management to make significant estimates and assumptions in determining the fair values of the assets acquired and liabilities assumed especially with respect to intangible assets.

Critical estimates in valuing intangible assets include, but are not limited to, future expected cash flows from customer relationships, developed technology, trade names and acquired patents; and discount rates. Management estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable. Unanticipated events and circumstances may occur which may affect the accuracy or validity of such assumptions, estimates or actual results.

We evaluate our long-lived assets and certain identifiable amortizable intangible assets for impairment in accordance with ASC Topic 360, Property, Plant and Equipment, whenever events or changes in circumstances indicate that the carrying amount of such assets or intangibles may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to future net undiscounted cash flows expected to be generated by an asset group. If such asset groups are considered to be impaired (i.e., if the sum of its estimated future undiscounted cash flows used to test for recoverability is less than its carrying value), the impairment loss to be recognized is measured by the amount by which the carrying amount of the asset group exceeds the fair value of the asset group. Intangible assets with definite lives are amortized using the straight-line method over the estimated useful lives of the related assets.

Stock-based Compensation

We recognize stock-based compensation expense for all share-based payment awards in accordance with ASC Topic 718, Compensation – Stock Compensation. Stock-based compensation expense for expected-to-vest awards is valued under the single-option approach and amortized on a straight-line basis, net of estimated forfeitures. We utilize the Black Scholes option-pricing model in order to determine the fair value of stock-based option awards. The Black Scholes pricing model requires various highly subjective assumptions including volatility, expected option life, and risk-free interest rate. The assumptions used in calculating the fair value of share-based payment awards represent management's best estimates. These estimates involve inherent uncertainties and the application of management judgment. If factors change and different assumptions are used, our stock-based compensation expense could be materially different in the future. In addition, we are required to estimate the expected forfeiture rate and recognize expense only for those expected-to-vest shares. If our actual forfeiture rate is materially different from our estimate, our recorded stock-based compensation expense and operating results could be different.

Recent Accounting Pronouncements

See Note 1, Organization and Summary of Significant Accounting Policies, in the accompanying notes to our consolidated financial statements in Item 8 of Part II of this Annual Report for a description of recent accounting pronouncements, which is incorporated herein by reference.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Not applicable.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and

Stockholders of Identiv, Inc.

Opinion on the Consolidated Financial Statements

We have audited the accompanying consolidated balance sheets of Identiv, Inc. (a Delaware Corporation) and its subsidiaries (the “Company”) as of December 31, 2018 and 2017, and the related consolidated statements of operations, comprehensive loss, stockholders’ equity, and cash flows for each of the two years in the period ended December 31, 2018, and the related notes (collectively referred to as the “consolidated financial statements”). In our opinion, the consolidated financial statements present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the two years in the period ended December 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

Change in Accounting Principle

As discussed in Note 1 to the consolidated financial statements, the Company changed its method of accounting for revenues from contracts with customers on January 1, 2018 due to the adoption of Accounting Standard Codification Topic 606, “Revenue from Contracts with Customers”.

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 Public Company Accounting Oversight Board (United States) (“PCAOB”) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

Our audits included performing procedures to assess the risks of material misstatement of the consolidated 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 consolidated 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 consolidated financial statements. We believe that our audits provide a reasonable basis for our opinion.

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

/s/ BPM LLP

San Jose, California

March 15, 2019

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IDENTIV, INC. AND SUBSIDIARIES

CONSOLIDATED BALANCE SHEETS

(In thousands, except par value)

	December 31,	
	2018	2017
ASSETS		
Current assets:		
Cash and cash equivalents	\$10,866	\$19,052
Accounts receivable, net of allowances of \$387 and \$306 as of December 31, 2018		
and 2017, respectively	14,952	12,282
Inventories	13,631	11,126
Prepaid expenses and other current assets	2,743	1,779
Total current assets	42,192	44,239
Property and equipment, net	2,624	2,043
Intangible assets, net	10,980	4,365
Goodwill	9,286	—
Other assets	1,224	715
Total assets	\$66,306	\$51,362
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	\$5,654	\$5,863
Current portion - payment obligation	1,025	888
Current portion - financial liabilities, net of discount and debt issuance costs		
of \$25 and \$404, respectively	11,554	9,829
Notes payable	2,000	—
Deferred revenue	2,174	900
Accrued compensation and related benefits	1,794	1,515
Other accrued expenses and liabilities	5,277	2,020
Total current liabilities	29,478	21,015
Long-term payment obligation	1,860	2,998
Long-term financial liabilities, net of discount and debt issuance costs		
of \$0 and \$582, respectively (see Note 8)	—	2,921
Long-term deferred revenue	636	190
Other long-term liabilities	632	385
Total liabilities	32,606	27,509
Commitments and contingencies (see Note 16)		
Stockholders' equity:		
Identiv, Inc. stockholders' equity:		
Series B preferred stock, \$0.001 par value: 5,000 shares authorized; 5,000		
and 3,000 shares issued and outstanding as of December 31, 2018 and 2017,		
respectively	5	3

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Common stock, \$0.001 par value: 50,000 shares authorized; 17,004 and 15,341 shares

issued and 15,967 and 14,436 shares outstanding as of December 31, 2018 and

2017, respectively	17	15
Additional paid-in capital	444,145	428,470
Treasury stock, 1,047 and 905 shares as of December 31, 2018 and 2017, respectively	(8,153)	(7,485)
Accumulated deficit	(404,353)	(399,647)
Accumulated other comprehensive income	2,209	2,675
Total Identiv, Inc. stockholders' equity	33,870	24,031
Noncontrolling interest	(170)	(178)
Total stockholders' equity	33,700	23,853
Total liabilities and stockholders' equity	\$66,306	\$51,362

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

IDENTIV, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF OPERATIONS

(In thousands, except per share data)

	Year Ended December 31,	
	2018	2017
Net revenue	\$78,142	\$60,219
Cost of revenue	44,810	38,059
Gross profit	33,332	22,160
Operating expenses:		
Research and development	7,235	6,146
Selling and marketing	16,391	13,452
General and administrative	10,824	7,241
Restructuring and severance	747	(49)
Total operating expenses	35,197	26,790
Loss from operations	(1,865)	(4,630)
Non-operating income (expense):		
Interest expense, net	(1,518)	(2,590)
Loss on extinguishment of debt, net	(1,369)	(788)
Foreign currency gains (losses), net	204	(358)
Loss before income taxes and noncontrolling interest	(4,548)	(8,366)
Income tax (provision) benefit	(155)	214
Net loss	(4,703)	(8,152)
Less: (Loss) income attributable to noncontrolling interest	(5)	14
Net loss attributable to Identiv, Inc.	(4,708)	(8,138)
Cumulative dividends on Series B preferred stock	(833)	—
Net loss attributable to common stockholders	\$(5,541)	\$(8,138)
Net loss per share:		
Basic	\$(0.35)	\$(0.61)
Diluted	\$(0.35)	\$(0.61)
Weighted average shares outstanding, basic and diluted	15,654	13,273

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

IDENTIV, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(In thousands)

	Year Ended December 31,	
	2018	2017
Net loss	\$(4,703)	\$(8,152)
Other comprehensive loss, net of income taxes:		
Foreign currency translation adjustment	(463)	638
Total other comprehensive (loss) income, net of income taxes	(463)	638
Comprehensive loss	(5,166)	(7,514)
Less: Comprehensive income attributable to noncontrolling interest	(8)	(2)
Comprehensive loss attributable to Identiv, Inc.	\$(5,174)	\$(7,516)

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

IDENTIV, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY

(In thousands; except par value)

	Identiv, Inc. Stockholders' Equity									
						Accumulated				
						Other				
	Series B	Pref	Common	Common	Paid-in	Treasury	Accumulated	Comprehensive	Noncontrolling	Totaling
	Shares	Amount	Shares	Amount	Capital	Stock	Deficit	Income	Interest	Equity
Balances, January 1, 2017	—	\$—	11,109	\$11	\$400,266	\$(6,708)	\$(391,509)	\$2,053	\$(180)	\$3,933
Net loss	—	—	—	—	—	—	(8,138)	—	(14)	(8,152)
Unrealized income (loss)										
from foreign currency										
translation adjustments	—	—	—	—	—	—	—	622	16	638
Issuance of Series B										
preferred stock,										
net of issuance cost	3,000	3	—	—	11,875	—	—	—	—	11,878
Issuance of common										
stock in connection										
with public offering	—	—	2,845	3	12,557	—	—	—	—	12,560
Issuance of warrants	—	—	—	—	2,319	—	—	—	—	2,319
Issuance of common										
stock in connection										
with vesting of										
stock awards	—	—	604	1	—	—	—	—	—	1
Stock-based compensation	—	—	—	—	2,480	—	—	—	—	2,480
Shares withheld in										
payment of taxes										
in connection with										
net share settlement										
of restricted stock units	—	—	(178)	—	—	(777)	—	—	—	(777)
Issuance of shares to	—	—	56	—	255	—	—	—	—	255

non-employees											
Cancellation of											
reacquired warrants											
from extinguishment											
of debt	—	—	—	—	(1,282)	—	—	—	—	(1,282)	
Balances, December 31, 2017	3,000	3	14,436	15	428,470	(7,485)	(399,647)	2,675	(178)	23,853	
Net loss	—	—	—	—	—	—	(4,708)	—	5	(4,703)	
Unrealized income (loss)											
from foreign currency											
translation adjustments	—	—	—	—	—	—	—	(466)	3	(463)	
Impact of adoption of ASC											
Topic 606 (Note 1)	—	—	—	—	—	—	2	—	—	2	
Issuance of Series B											
preferred stock,											
net of issuance costs	2,000	2	—	—	7,874	—	—	—	—	7,876	
Issuance of common stock											
in connection with											
acquisition of											
3VR Security	—	—	724	1	2,634	—	—	—	—	2,635	
Issuance of common stock											
in connection with											
acquisition of											
Thursby Software Systems	—	—	427	1	2,496	—	—	—	—	2,497	
Issuance of common											
stock in connection											
with vesting of											
stock awards	—	—	515	—	—	—	—	—	—	—	
Proceeds of exercise of											
stock options	—	—	3	—	13	—	—	—	—	13	
Stock-based compensation	—	—	—	—	2,646	—	—	—	—	2,646	
Shares withheld in	—	—	(142)	—	—	(668)	—	—	—	(668)	
payment of taxes											

in connection with

net share settlement

of restricted stock units

Issuance of shares to

non-employees	—	—	4	—	12	—	—	—	—	12
Balances, December 31, 2018	5,000	\$5	15,967	\$17	\$444,145	\$(8,153)	\$(404,353)	\$2,209	\$(170)	\$33,700

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

IDENTIV, INC. AND SUBSIDIARIES

CONSOLIDATED STATEMENTS OF CASH FLOWS

(In thousands)

	Year Ended December 31,	
	2018	2017
Cash flows used in operating activities:		
Net loss	\$(4,703)	\$(8,152)
Adjustments to reconcile net loss to net cash used in operating activities:		
Depreciation and amortization	3,167	2,752
Loss on extinguishment of debt, net	1,369	788
Accretion of interest on long-term payment obligation	229	305
Amortization of debt issuance costs	337	807
Stock-based compensation expense	2,646	2,480
Changes in operating assets and liabilities:		
Accounts receivable	(68)	(2,786)
Inventories	(959)	484
Prepaid expenses and other assets	(1,297)	(275)
Accounts payable	(1,819)	(222)
Payment obligation liability	(1,230)	(1,192)
Deferred revenue	(1,449)	5
Accrued expenses and other liabilities	(1,419)	(2,705)
Net cash used in operating activities	(5,196)	(7,711)
Cash flows from investing activities:		
Capital expenditures	(1,346)	(967)
Acquisition of business, net of cash acquired	(2,027)	—
Net cash used in investing activities	(3,373)	(967)
Cash flows from financing activities:		
Proceeds from issuance of debt, net of issuance costs	21,801	53,035
Repayments of debt	(28,214)	(58,741)
Proceeds from issuance of common stock, net of issuance costs	—	12,560
Taxes paid related to net share settlement of restricted stock units	(668)	(777)
Proceeds from issuance of Series B preferred stock, net of issuance costs	7,876	11,879
Proceeds from exercise of stock options	13	—
Net cash provided by financing activities	808	17,956
Effect of exchange rates on cash	(425)	658
Net (decrease) increase in cash	(8,186)	9,936
Cash and cash equivalents at beginning of period	19,052	9,116
Cash and cash equivalents at end of period	\$10,866	\$19,052
Supplemental Disclosures of Cash Flow Information:		
Interest paid	\$1,787	\$2,661
Taxes paid, net	\$179	\$140
Non-cash investing and financing activities:		
Warrants issued as debt issuance costs in connection with debt agreement	\$—	\$2,319
Liability settled in common stock	\$—	\$255
Property and equipment included in accounts payable and accruals	\$—	\$66

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Cancellation of reacquired warrants	\$—	\$1,282
Cumulative dividends on Series B Preferred Stock	\$833	\$—
Issuance of shares to non-employees	\$12	\$—
Common stock issued for acquisition of businesses	\$5,132	\$—
Promissory notes issued in acquisition of business	\$2,000	\$—

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

IDENTIV, INC. AND SUBSIDIARIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. Summary of Significant Accounting Policies

Description of Business — Identiv, Inc. (the “Company,”) is a global security technology company that secures data, physical places and things. Global organizations in the government, education, retail, transportation, healthcare and other markets rely upon the Company’s solutions. The Company’s solutions allow its customers to create safe, secure, validated and convenient experiences in schools, government offices, factories, transportation, hospitals and other types of facilities. The Company’s corporate headquarters are in Fremont, California. The Company maintains research and development facilities in California, and Chennai, India and local operations and sales facilities in Germany, Hong Kong, Japan, Singapore, and the United States. The Company was founded in 1990 in Munich, Germany and was incorporated in 1996 under the laws of the State of Delaware.

Principles of Consolidation — The accompanying consolidated financial statements include the accounts of the Company and its wholly and majority owned subsidiaries. All intercompany balances and transactions have been eliminated in consolidation.

Reclassifications — Certain reclassifications have been made to the fiscal year 2017 financial statements to conform to the fiscal year 2018 presentation. The reclassifications had no impact on net loss, total assets, or stockholders’ equity.

Use of Estimates — The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (“U.S. GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent liabilities as of the date of the financial statements and the reported amounts of revenue and expenses during the reporting period. The Company believes judgment is involved in determining revenue recognition; the acquisition-date fair value of intangible assets; the fair value of contingent consideration associated with acquisitions; the recoverability of long-lived assets; impairment of goodwill and intangible assets; stock-based compensation expense; and income tax uncertainties. The Company bases these estimates on historical and anticipated results, trends, and various other assumptions that the Company believes are reasonable under the circumstances, including assumptions as to future events. Actual results could differ materially from those estimates and assumptions.

Concentration of Credit Risk — No customer accounted for 10% or more of net revenue for the years ended December 31, 2018 and 2017, respectively. No customer accounted for 10% or more of the Company’s accounts receivable balance at December 31, 2018 or 2017. The Company does not require collateral or other security to support accounts receivable. To reduce risk, the Company’s management performs ongoing credit evaluations of its customers’ financial condition. The Company maintains allowances for potential credit losses in its consolidated financial statements.

Allowance for Doubtful Accounts — The allowance for doubtful accounts is based on the Company’s assessment of the collectibility of customer accounts. The Company regularly reviews its receivables that remain outstanding past their applicable payment terms and establishes an allowance and potential write-offs by considering factors such as historical experience, credit quality, age of the accounts receivable balances, and current economic conditions that may affect a customer’s ability to pay. Although the Company expects to collect net amounts due as stated on the consolidated balance sheets, actual collections may differ from these estimated amounts.

Inventories — Inventories are stated at the lower of cost, using standard cost, approximating average cost, or FIFO method, as applicable, or market value. Inventory is written down for excess inventory, technical obsolescence and the inability to sell based primarily on historical sales and expectations for future use. The Company operates in an industry characterized by technological change. The planning of production and inventory levels is based on internal forecasts of customer demand, which are highly unpredictable and can fluctuate substantially. Should the demand for

the Company's products prove to be significantly less than anticipated, the ultimate realizable value of the Company's inventory could be substantially less than amounts in the consolidated balance sheets. Once inventory has been written down below cost, it is not subsequently written up.

Business Combinations — The tangible and identifiable intangible assets acquired and liabilities assumed in a business combination are recorded based on their estimated fair values as of the business combination date, including identifiable intangible assets which either arise from a contractual or legal right or are separable from goodwill. The Company bases the estimated fair value of identifiable intangible assets acquired in a business combination on independent valuations that use information and assumptions provided by management, which consider management's estimates of inputs and assumptions that a market participant would use. Any excess purchase price over the estimated fair value assigned to the net tangible and identifiable intangible assets acquired and liabilities assumed is recorded to goodwill. The use of alternative valuation assumptions, including estimated revenue projections, growth rates, cash flows, discount rates, estimated useful lives and probabilities surrounding the achievement of contingent milestones could result in different purchase price allocations and amortization expense in current and future periods.

In circumstances where an acquisition involves a contingent consideration arrangement that meets the definition of a liability under the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) Topic 480, Distinguishing Liabilities from Equity, the Company recognizes a liability equal to the fair value of the contingent payments the Company expects to make as of the acquisition date. The Company remeasures this liability each reporting period and records changes in the fair value as a component of operating expenses.

Transaction costs associated with acquisitions are expensed as incurred in general and administrative expenses. Results of operations and cash flows of acquired companies are included in the Company’s operating results from the date of acquisition.

Intangible Assets — Amortizable intangible assets include trademarks, developed technology and customer relationships acquired as part of business combinations. Intangible assets subject to amortization are amortized using the straight-line method over their estimated useful lives ranging from four to twelve years and are reviewed for impairment in accordance with ASC Topic 360, Property, Plant and Equipment.

Goodwill — In accordance with ASC Topic 350, Intangibles-Goodwill and Other (“ASC 350”), the Company’s goodwill is not amortized but is tested for impairment on an annual basis or whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. In testing for goodwill impairment, the Company compares the fair value of its reporting unit to its carrying value including the goodwill of that unit. If the carrying value, including goodwill, exceeds the reporting unit’s fair value, the Company will recognize an impairment loss for the amount by which the carrying amount exceeds the reporting unit’s fair value. The loss recognized cannot exceed the total amount of goodwill allocated to that reporting unit.

Property and Equipment — Property and equipment are stated at cost less accumulated depreciation. Depreciation and amortization are computed using the straight-line method over estimated useful lives of three to ten years for furniture, fixture and office equipment, five to seven years for machinery, five years for automobiles and three years for computer software. Leasehold improvements are amortized over the shorter of the lease term or their estimated useful life.

Long-Lived Assets — The Company reviews long lived assets for impairment whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. An impairment loss is recognized when the total estimated future undiscounted cash flows expected to result from the use of the asset and its eventual disposition are less than its carrying amount. Impairment, if any, is assessed using discounted cash flows or other appropriate measures of fair value. There were no impairment losses recorded during the years ended December 31, 2018 or 2017.

Research and Development — Costs to research, design, and develop the Company’s products are expensed as incurred and consist primarily of employee compensation and fees for the development of prototype products. Software development costs are capitalized beginning when a product’s technological feasibility has been established and ending when a product is available for general release to customers. Generally, the Company’s products are released soon after technological feasibility has been established. Costs incurred subsequent to achieving technological feasibility have not been significant and generally have been expensed as incurred. At December 31, 2018, the net amount of capitalized software development costs was \$381,000 and is included in other current and long term assets in the accompanying consolidated balance sheets. Software development costs capitalized in 2017 was \$401,000.

The Company capitalizes certain costs for its internal-use software incurred during the application development stage. Costs related to preliminary project activities and post implementation activities are expensed as incurred. Internal-use software is amortized on a straight line basis over its estimated useful life, generally three years. The estimated useful life is determined based on management’s judgment on how long the core technology and functionality serves internal needs and the customer base. Management evaluates the useful lives of these assets on an annual basis and tests for impairment whenever events or changes in circumstances occur that could impact the recoverability of these assets.

The Company recorded amortization expense related to software development costs of \$0.2 million and \$0.2 million for the years ended December 31, 2018 and 2017, respectively.

Freight Costs — The Company reflects the cost of shipping its products to customers as a cost of revenue. Reimbursements received from customers for freight costs are recognized as product revenue.

Income Taxes — The Company accounts for income taxes in accordance with ASC Topic 740, Income Taxes (“ASC 740”), which requires the asset and liability approach for financial accounting and reporting of income taxes. Deferred income taxes reflect the recognition of future tax consequences of events that have been recognized in the Company’s financial statements or tax returns. The carrying value of net deferred tax assets reflects that the Company has been unable to generate sufficient taxable income in certain tax jurisdictions. A valuation allowance is provided to reduce the deferred tax asset to an amount that is more likely than not to be realized. The deferred tax assets are still available for the Company to use in the future to offset taxable income, which would result in the recognition of a tax benefit and a reduction in the Company’s effective tax rate. Actual operating results and the underlying amount and category of income in future years could render the Company’s current assumptions, judgments and estimates of the realizability of deferred tax assets inaccurate, which could have a material impact on its financial position or results of operations.

The Company accounts for uncertain tax positions in accordance with ASC 740, which clarifies the accounting for uncertainty in income taxes recognized in an enterprise's financial statements. It prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. ASC 740 also provides guidance on derecognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition. Such changes in recognition or measurement might result in the recognition of a tax benefit or an additional charge to the tax provision in the period.

The Company recognizes interest and penalties related to unrecognized tax benefits within the income tax expense line in the accompanying consolidated statement of operations. Accrued interest and penalties are included within the related tax liability line in the consolidated balance sheets. See Note 8, Income Taxes, for further information regarding the Company's tax disclosures.

Stock-based Compensation — The Company accounts for all stock-based payment awards, including employee stock options and restricted stock awards, in accordance with ASC Topic 718, Compensation-Stock Compensation ("ASC 718"). Under the fair value recognition provisions of ASC 718, stock-based compensation cost is measured at the grant date based on the fair value of the award. Compensation expense for all stock-based payment awards is recognized using the straight-line single-option approach. Employee stock options awards are valued under the single-option approach and amortized on a straight-line basis, net of estimated forfeitures. The value of the portion of the stock option award that is ultimately expected to vest is recognized as expense over the requisite service periods in the Company's consolidated statements of operations. See Note 11, Stock-Based Compensation, for further information regarding the Company's stock-based compensation assumptions and expenses.

The Company has elected to use the Black Scholes pricing model to estimate the fair value of its options, which incorporates various subjective assumptions including volatility, risk-free interest rate, expected life, and dividend yield to calculate the fair value of stock option awards. Since the Company has been publicly traded for many years, it utilizes its own historical volatility in valuing its stock option grants. The expected life of an award is based on historical experience, the terms and conditions of the stock awards granted to employees, as well as the potential effect from options that have not been exercised at the time. The assumptions used in calculating the fair value of stock-based payment awards represent management's estimates. These estimates involve inherent uncertainties and the application of management's judgment. If factors change and the Company uses different assumptions, its stock-based compensation expense could be materially different in the future. In addition, the Company estimates the expected forfeiture rate and recognizes expense only for those awards which are ultimately expected-to-vest shares. If the actual forfeiture rate is materially different from the Company's estimate, the recorded stock-based compensation expense could be different. ASC 718 requires forfeitures to be estimated at the time of grant and revised, if necessary, in subsequent periods if actual forfeitures differ from those estimates.

Net Loss Per Share — Basic and diluted net loss per share is based upon the weighted average number of common shares outstanding during the period. Diluted net loss per share is based upon the weighted average number of common shares and dilutive-potential common share equivalents outstanding during the period, if applicable. Dilutive-potential common share equivalents are excluded from the computation of net loss per share in the loss periods as their effect would be antidilutive. As the Company has incurred losses from continuing operations during each of the last two fiscal years, shares issuable pursuant to equity awards are excluded from the computation of diluted net loss per share in the accompanying consolidated statements of operations as their effect is anti-dilutive.

Comprehensive Loss — Comprehensive loss for the years ended December 31, 2018 and 2017 has been disclosed within the consolidated statements of comprehensive loss. Other accumulated comprehensive loss includes net foreign currency translation adjustments which are excluded from consolidated net loss.

Foreign Currency Translation and Transactions — The functional currencies of the Company's foreign subsidiaries are the local currencies, except for the Singapore subsidiary, which uses the U.S. dollar as its functional currency. For those subsidiaries whose functional currency is the local currency, the Company translates assets and liabilities to

U.S. dollars using period-end exchange rates and translates revenues and expenses using average exchange rates during the period. Exchange gains and losses arising from translation of foreign entity financial statements are included as a component of other comprehensive loss and gains and losses from transactions denominated in currencies other than the functional currency of the Company are included in the Company's consolidated statements of operations. The Company recognized currency gains of \$0.2 million in 2018 and currency losses of \$0.4 million in 2017.

Recent Accounting Pronouncements

From time to time, new accounting pronouncements are issued by the FASB or other standard setting bodies that the Company adopts as of the specified effective date. Unless otherwise discussed, the Company does not believe that the impact of recently issued standards that are not yet effective will have a material impact on its financial position or results of operations upon adoption.

In March 2016, the FASB issued Accounting Standards Update (“ASU”) 2016-09, Compensation – Stock Compensation, which provides guidance to simplify several aspects of accounting for share-based payment transactions, including the accounting for income taxes, forfeitures, statutory tax withholding requirements, as well as classification in the statement of cash flows. The guidance is effective for reporting periods beginning after December 15, 2016. The Company adopted this guidance effective January 1, 2017. The Company's adoption of this standard did not have a significant impact on its consolidated financial statements. No excess income tax benefit or tax deficiencies were recorded as a result of the adoption and there was no change to accumulated deficit with respect to previously unrecognized excess tax benefits. The Company elected to continue to account for forfeitures on an estimated basis. The Company has elected to present the consolidated statements of cash flows on a prospective transition method and no prior periods have been adjusted.

In February 2016, the FASB issued ASU No. 2016-02, “Leases (Topic 842)” (“ASU 2016-02”). ASU 2016-02 requires lessees to recognize assets and liabilities on the balance sheet for all leases with terms longer than twelve months. The ASU also requires disclosure of certain information about leasing arrangements. ASU 2016-02 is effective on January 1, 2019, using a modified retrospective method of adoption. In August 2018, the FASB issued ASU 2018-11, “Targeted Improvements to ASC 842”, which includes an option to not restate comparative periods in transition and elect to use the effective date of ASC Topic 842, “Leases,” as the date of initial application of transition. The Company adopted this ASU on January 1, 2019 and elected the transition option provided under ASU 2018-11 to recognize a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption. While the Company continues to review its population of leased assets, it expects to recognize operating lease liabilities ranging from \$5.0 to \$6.0 million, with corresponding right of use assets of the same amount based on the present value of the remaining lease payments over the lease term. This standard is not expected to have a material impact on the Company's results of operations or cash flows.

In January 2017, the FASB issued ASU 2017-04, Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment (“ASU 2017-04”), which eliminates the performance of Step 2 from the goodwill impairment test. In performing its annual or interim impairment testing, an entity will instead compare the fair value of the reporting unit with its carrying amount and recognize any impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. Additionally, an entity should consider income tax effects from any tax deductible goodwill on the carrying amount of the reporting unit when measuring the goodwill impairment loss. The standard is effective for fiscal years beginning after December 15, 2019. Early adoption is permitted for interim or annual impairment tests performed on testing dates after January 1, 2017. The Company is currently in the process of evaluating when it will adopt ASU 2017-04 and its impact on its consolidated financial statements.

Recently Adopted Accounting Pronouncements

In May 2014, the FASB issued ASU 2014-09, Revenue from Contracts with Customers (“Topic 606”), which supersedes the revenue recognition requirements in Revenue Recognition (Topic 605)” and Subtopic 985-605 “Software - Revenue Recognition.” Topic 605 and Subtopic 985-605 are collectively referred to as “Topic 605” or “prior GAAP.” Under Topic 606, revenue is recognized when a customer obtains control of promised goods or services in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. In addition, Topic 606 requires enhanced disclosures, including disclosure of the nature, amount, timing, and uncertainty of revenue and cash flows arising from contracts with customers.

The Company adopted Topic 606 on January 1, 2018 using the modified retrospective transition method. Under this method, the Company evaluated contracts that were in effect at the beginning of fiscal 2018 as if those contracts had been accounted for under Topic 606. Under the modified retrospective transition approach, periods prior to the adoption date were not adjusted and continue to be reported in accordance with historical, pre-Topic 606 accounting.

On the adoption date, a cumulative catch up adjustment was recorded to beginning retained earnings to reflect the impact of all existing arrangements under Topic 606. The Company increased retained earnings and decreased

deferred revenue by approximately \$2,000 for an uncompleted software development and technical support services contract with a customer. Under Topic 605 accounting, since the Company was unable to establish vendor-specific objective evidence (“VSOE”) of fair value for the product development and technical support services components in the contract, the Company was required to defer the revenue and recognize it over the term of the contract. Under Topic 606, the Company would have been required to establish the standalone selling price of each of the performance obligations in the contract and recognize the product development services revenue upon delivery, and recognize the technical support services revenue ratably over the term of the contract.

The Company does not expect the impact of the adoption of Topic 606 to be material to its annual revenue and net income on an ongoing basis. Revenue generated under Topic 606 has been materially comparable to revenue recognized under Topic 605 in fiscal 2017 primarily due to the elimination of deferred revenue associated with the product development services discussed above that, under Topic 605, would have continued to be recognized into revenue in 2018 and 2019, offset by an increase in the revenue recognized related to the amount and timing of technical support services provided in the contract discussed above. The actual effects on revenue recognized for the fiscal year ended December 31, 2018 are reported in the table below.

No incremental sales commission costs or other costs related to obtaining customer contracts were capitalized at the adoption date as they were immaterial.

The timing of revenue recognition for hardware and professional services is expected to remain substantially unchanged. The Company's overall mix of revenue recognized at a point in time versus over time is expected to increase in the future due to the intended growth and expansion of its services offerings. For the year ended December 31, 2018, approximately 94% of the Company's revenue was recognizable on delivery and 6% over time.

The following table summarizes the effects of adopting Topic 606 on the Company's consolidated balance sheet as of December 31, 2018 (in thousands):

	Balance at December 31, 2017	Adjustments	Balance at January 1, 2018
Deferred revenue	\$1,090	\$ (2)	\$1,088
Accumulated deficit	(399,647)	2	(399,645)

The following table summarizes the effects of adopting Topic 606 on the Company's consolidated statement of operations for the year ended December 31, 2018 (in thousands, except per share amounts):

	As Reported Under Topic 606	Adjustments	Balance Under Prior GAAP
Net revenue	\$ 78,142	\$ 1	\$ 78,143
Cost of revenue	44,810	—	44,810
Operating expenses	35,197	—	35,197
Provision for income taxes	(155)	—	(155)
Net loss	(4,703)	1	(4,702)
Net loss attributable to common stockholders	(5,541)	1	(5,540)
Basic and diluted net loss per share:			
Basic	\$ (0.35)	—	\$ (0.35)
Diluted	\$ (0.35)	—	\$ (0.35)

The adoption of Topic 606 had no impact on the Company's net cash used in operating activities, net cash used in investing activities or net cash provided by financing activities.

2. Revenue

Revenue Recognition

Revenue is recognized upon transfer of control of promised products or services to customers in an amount that reflects the consideration the Company expects to receive in exchange for those products or services. The Company enters into contracts that can include various combinations of its products, software licenses, and services, which are generally capable of being distinct and accounted for as separate performance obligations. For contracts with multiple performance obligations, the Company allocates the transaction price of the contract to each performance obligation, generally on a relative basis using its standalone selling price. The stated contract value is generally the transaction price to be allocated to the separate performance obligations. Revenue is recognized net of any taxes collected from customers that are subsequently remitted to governmental authorities.

Nature of Products and Services

The Company derives revenues primarily from sales of hardware products, software licenses, professional services, software maintenance and support, and extended hardware warranties.

Hardware Product Revenues — The Company generally has two performance obligations in arrangements involving the sale of hardware products. The first performance obligation is to transfer the hardware product (which includes software integral to the functionality of the hardware product). The second performance obligation is to provide assurance that the product complies with its agreed-upon specifications and is free from defects in material and workmanship for a period of one to three years (i.e. assurance warranty). The entire transaction price is allocated to the hardware product and is generally recognized as revenue at the time of delivery because the customer obtains control of the product at that point in time. The Company has concluded that control generally transfers at that point in time because the customer has title to the hardware, physical possession, and a present obligation to pay for the hardware. None of the transaction price is allocated to the assurance warranty component, as the Company accounts for these product warranty costs in accordance with ASC Topic 460, Guarantees. Payments for hardware contracts are generally due 30 to 60 days after shipment of the hardware product.

Software License Revenues — The Company’s license arrangements grant customers the perpetual right to access and use the licensed software products at the outset of an arrangement. Technical support and software updates are generally made available throughout the term of the support agreement, which is generally one to three years. The Company accounts for these arrangements as two performance obligations: (1) the software licenses, and (2) the related updates and technical support. The software license revenue is recognized upon delivery of the license to the customer, while the software updates and technical support is recognized over the term of the support contract. Payments are generally due 30 to 60 days after delivery of the software licenses.

Professional Services Revenues — Professional services revenues consist primarily of programming customization services performed relating to the integration of the Company’s software products with the customers other systems, such as HR systems. Professional services contracts are generally billed on a time and materials basis and revenue is recognized as the services are performed. For contracts billed on a fixed price basis, revenue is recognized once the contract is complete. Payments for services are generally due when services are performed.

Software Maintenance and Support Revenues — Support and maintenance contract revenues consist of the services provided to support the specialized programming applications performed by our professional services group. Support and maintenance contracts are typically billed at inception of the contract and recognized as revenue over the contract period, typically over a one to three year period.

Extended Hardware Warranties Revenues — Sales of our hardware products may also include optional extended hardware warranties, which typically provide assurance that the product will continue function as initially intended. Extended hardware warranty contracts are typically billed at inception of the contract and recognized as revenue over the respective contract period, typically over one to two year periods after the expiration of the original assurance warranty.

Performance	When Performance Obligation is	When Payment is	How Standalone Selling Price is
Obligation	Typically Satisfied	Typically Due	Typically Estimated
Hardware products	When customer obtains control of the product (point-in-time)	Within 30-60 days of shipment	Observable in transactions without multiple performance obligations
Software licenses	When license is delivered to customer or made available for download, and the applicable license period has begun (point-in-time)	Within 30-60 days of the beginning of license period	Established pricing practices for software licenses bundled with software maintenance, which are separately observable in renewal transactions
Professional services	As services are performed and/or when the contract is fulfilled (point-in-time)	Within 30-60 days of delivery	Observable in transactions without multiple performance obligations
Software maintenance and support services	Ratably over the course of the support contract (over time)	Within 30-60 days of the beginning of the contract period	Observable in renewal transactions
Extended hardware	Ratably over the course of the support contract (over time)	Within 30-60 days of the beginning of	Observable in renewal transactions

warranties

the contract period

Significant Judgments

The Company's contracts with customers often include promises to transfer multiple products and services to a customer. For such arrangements, the Company allocates the transaction price to each performance obligation based on its relative standalone selling price ("SSP").

Judgment is required to determine the SSP for each distinct performance obligation in a contract. For the majority of items, the Company estimates SSP using historical transaction data. The Company uses a range of amounts to estimate SSP when it sells each of the products and services separately and needs to determine whether there is a discount to be allocated based on the relative SSP of the various products and services. In instances where SSP is not directly observable, such as when the product or service is not sold separately, the Company determines the SSP using information that may include market conditions and other observable inputs.

The determination of SSP is an ongoing process and information is reviewed regularly in order to ensure SSPs reflect the most current information or trends.

Disaggregation of Revenues

The Company disaggregates revenue from contracts with customers based on the timing of transfer of goods or services to customers (point-in-time or over time) and geographic region based on the shipping location of the customer. The geographic regions that are tracked are the Americas, Europe and the Middle East, and Asia-Pacific regions. The Company operates as two operating segments.

Total net sales based on the disaggregation criteria described above are as follows (in thousands):

	Year Ended December 31, 2018			2017		
	Point-in-		Total	Point-in-		Total
	Time	Over Time		Time	Over Time	
Americas	\$55,906	\$4,247	\$60,153	\$38,502	\$1,516	\$40,018
Europe and the Middle East	9,785	158	9,943	7,847	40	7,887
Asia-Pacific	8,023	23	8,046	12,314	—	12,314
Total	\$73,714	\$4,428	\$78,142	\$58,663	\$1,556	\$60,219

Contract Balances

Amounts invoiced in advance of services being provided are accounted for as deferred revenue. Nearly all of the Company's deferred revenue balance is related software maintenance contracts. Payment terms and conditions vary by contract type, although payment is typically due within 30 to 90 days of contract inception. In instances where the timing of revenue recognition differs from the timing of invoicing, the Company has determined its contracts do not include a significant financing component. The primary purpose of the Company's invoicing terms is to provide customers with simplified and predictable ways of purchasing the Company's products and services, not to receive financing from its customers.

Changes in deferred revenue during the year ended December 31, 2018 were as follows (in thousands):

	Amount
Deferred revenue at December 31, 2017	\$ 1,090
Impact of adoption of Topic 606	(2)
Deferred revenue at January 1, 2018	1,088
Fair value of deferred revenue acquired in acquisition, net of recognition	1,582
Deferral of revenue billed in current period, net of recognition	1,098
Recognition of revenue deferred in prior periods	(958)
Balance as of December 31, 2018	\$ 2,810

Unsatisfied Performance Obligations

Revenue expected to be recognized in future periods related to remaining performance obligations, excluding revenue pertaining to contracts that have an original expected duration of one year or less, and contracts where revenue is recognized as invoiced, was approximately \$1.9 million as of December 31, 2018. Since the Company typically invoices customers at contract inception, this amount is included in deferred revenue balance. As of December 31, 2018, the Company expects to recognize approximately 66% of the revenue related to these unsatisfied performance obligations during 2019, 26% during 2020, and 8% thereafter.

Assets Recognized from the Costs to Obtain a Contract with a Customer

The Company recognizes an asset for the incremental costs of obtaining a contract with a customer if it expects the benefit of those costs to be longer than one year. The Company has determined that certain sales incentive programs (i.e. commissions) meet the requirements to be capitalized. Capitalized incremental costs related to contracts are amortized over the respective contract periods. For the year ended December 31, 2018, total capitalized costs to obtain contracts were immaterial.

Practical Expedients

As discussed in Note 1, Organization and Summary of Significant Accounting Policies, and Note 2, Revenue, the Company has elected the following practical expedients in accordance with Topic 606:

- The Company expenses costs as incurred for costs to obtain a contract when the amortization period would have been one year or less. These costs include internal sales force compensation programs and certain partner sales incentive programs as the Company has determined annual compensation is commensurate with annual sales activities.
- The Company generally expenses sales commissions when incurred because the amortization period would have been one year or less. These costs are recorded within sales and marketing expense.
- The Company does not disclose the value of unsatisfied performance obligations for contracts with an original expected length of one year or less.
- The Company does not consider the time value of money for contracts with original durations of one year or less.

3. Business Combinations

3VR Security, Inc.

On February 14, 2018, the Company acquired 3VR Security, Inc. (“3VR”), a video technology and analytics company, pursuant to an Agreement and Plan of Merger (the “Merger Agreement”) by and among the Company, Eagle Acquisition, Inc., a California corporation and a wholly owned subsidiary of the Company (“Merger Sub”), 3VR, and Fortis Advisors LLC, a Delaware limited liability company, acting as Security Holder Representative. Pursuant to the Merger Agreement, at the effective time, Merger Sub merged with and into 3VR and 3VR became a wholly-owned subsidiary of the Company (the “Acquisition”).

Under the terms of the Merger Agreement, at the closing of the Acquisition, the Company acquired all of the outstanding shares of 3VR for total purchase consideration of \$6.2 million, consisting of:

- (i) payment in cash of approximately \$1.6 million;
- (ii) issuance of subordinated unsecured promissory notes in an aggregate principal amount of \$2.0 million;
- (iii) issuance of 609,830 shares of the Company’s common stock with a value of approximately \$2.3 million.

An aggregate of up to \$1.0 million, or 294,927 shares, of the Company’s common stock were issued subsequent to the closing of the transaction and were held back for a period of up to 12 months following the closing for the satisfaction of certain indemnification claims. On May 9, 2018, the Company and the Security Holder Representative reached agreement as to the satisfaction of certain of the indemnification claims asserted by the Company at the closing of the Acquisition. As a result, the purchase consideration, and the amount of goodwill recorded, were reduced by \$660,000. Of the 294,927 shares that were held back at closing, 181,319 shares were canceled. On January 25, 2019, subject to the terms of the Merger Agreement, the Company filed an additional dispute with the security holder representative for an amount exceeding the remaining amount of the holdback shares of approximately \$0.3 million, or 93,406 shares.

Additionally, in the event that 3VR achieved \$24.1 million in product shipments in 2018, the Company would have been obligated to issue further earn-out consideration of \$3.5 million payable in shares of the Company's common stock (subject to certain conditions) with a potential maximum earn-out value of \$7.0 million in the event that such shipments exceeded \$48.2 million. Further, in calendar year 2019, the Company may be obligated to pay, in cash, and subject to certain conditions, contingent consideration equal to the lesser of (a) 35% of the gross margin of certain products sold and services rendered by 3VR in 2018 pursuant to a supply arrangement and (b) \$25.0 million, each subject to adjustments. Management has assessed the probability of the issuance of shares related to the payment of the contingent consideration noted above, and determined it as remote. Accordingly, no value was ascribed to the contingent consideration as of December 31, 2018.

On February 14, 2019, the Company repaid the noteholders an aggregate principal amount, including accrued interest, of \$2,060,000.

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Assets acquired and liabilities assumed are recorded based on valuations derived from estimated fair value assessments and assumptions used by the Company. Such estimates and assumptions are subject to change within the measurement period (up to one year from the Acquisition). The following table summarizes the fair values of assets acquired and liabilities assumed at the date of the Acquisition (in thousands):

Cash	\$ 195
Accounts receivable	2,029
Inventory	257
Prepaid expenses and other current assets	169
Property and equipment	334
Trademarks	400
Customer relationships	2,900
Developed technology	3,000
Total identifiable assets acquired	9,284
Accounts payable	(1,590)
Accrued expenses and liabilities	(726)
Deferred revenue	(2,928)
Debt	(3,622)
Total liabilities assumed	(8,866)
Net identifiable assets acquired	418
Goodwill	5,796
Purchase price	\$6,214

In June 2018, the Company recorded an adjustment to its accounting for the amount recorded as accounts receivable at acquisition. Accordingly, the fair value of accounts receivable was decreased by \$561,000, with a corresponding increase to goodwill and reflected in the Company's purchase price allocation.

Acquisition related intangibles included in the above table are finite-lived and are being amortized on a straight-line basis over their estimated lives, which approximates the pattern in which the economic benefits of the intangible assets are expected to be realized, as follows (in thousands):

	Gross Purchased	Estimated Useful Life
	Intangible Assets	(in Years)
Trademarks	\$ 400	5
Customer relationships	2,900	10
Developed technology	3,000	10
	\$ 6,300	

Goodwill represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired. The Acquisition resulted in \$5.8 million of goodwill which is not deductible for tax purposes. With the

addition of the 3VR video security and analytics platform, the Company believes this goodwill largely reflects the expansion of its Hirsch product and service offerings through the complementary offerings of 3VR. In accordance with ASC 350, goodwill will not be amortized but tested for impairment at least annually in the fourth quarter. See Note 5, Goodwill and Intangible Assets.

The results of operations of 3VR for the period from the acquisition date through December 31, 2018 are included in the accompanying consolidated statements of operations. Pursuant to ASC Topic 805, Business Combinations (“ASC 805”), the Company incurred and expensed approximately \$548,000 and \$212,000 in acquisition and transitional costs associated with the Acquisition during the years ended December 31, 2018 and 2017, respectively, which were primarily general and administrative expenses.

Thursby Software Systems

On November 1, 2018, the Company completed the acquisition of Thursby Software Systems, Inc., a provider of security software for mobile devices, pursuant to an Agreement and Plan of Merger (the “Thursby Agreement”), by and among the Company, TSS Merger Sub, Inc., a wholly owned subsidiary of the Company (“Merger Sub 1”), TSS Acquisition, LLC., a wholly owned subsidiary of the Company (“Merger Sub 2” and together with Merger Sub 1, the “Merger Subs”), Thursby Software Systems, Inc., (“TSS”), and William Thursby as the sole Shareholder of TSS. Pursuant to the Thursby Agreement, at the effective time, Merger Sub 1 merged with and into TSS and TSS became a wholly-owned subsidiary of the Company (“Merger 1”), following which TSS merged with and into Merger Sub 2, whereupon which the separate corporate existence of TSS ceased with Merger Sub 2 surviving the merger (“Merger 2”).

Under the terms of the Thursby Agreement, at the closing of the acquisition, the Company acquired all of the outstanding shares of TSS for total purchase consideration of \$3.1 million, consisting of:

- (i) \$0.6 million in cash, net of cash acquired;
- (ii) issuance of 426,621 shares of the Company’s common stock with a value of approximately \$2.5 million.

An aggregate of up to \$0.5 million, or 85,324 shares, of the Company’s common stock issuable at the closing of the transaction are being held back for a period of up to 12 months following the closing for the satisfaction of certain indemnification claims.

Additionally, in the event that revenue from TSS products is greater than \$8.0 million, \$11.0 million, or \$15.0 million in product shipments in 2019, the Company will be obligated to issue earn-out consideration of up to a maximum of \$7.5 million payable in shares of the Company’s common stock, subject to certain conditions. In the event that such revenue is less than \$15.0 million in 2019, but 2020 revenue from TSS products exceeds \$15.0 million, the Company will be obligated to issue an additional \$2.5 million in earn-out consideration payable in shares of the Company’s common stock. The maximum total earn-out consideration payable for all periods is \$7.5 million in the aggregate, payable in shares of the Company’s common stock. Management has assessed the probability of the issuance of shares related to the earn-out consideration, and the payment of the contingent consideration noted above, and determined it as remote. Accordingly, no value was ascribed to the earn-out as of December 31, 2018.

Assets acquired and liabilities assumed are recorded based on valuations derived from estimated fair value assessments and assumptions used by the Company. Such estimates and assumptions are subject to change within the measurement period (up to one year from the acquisition). The following table summarizes the fair values of assets acquired and liabilities assumed at the date of acquisition (in thousands):

Cash	\$3,485
Accounts receivable	526
Inventory	1,361
Prepaid expenses and other current assets	12

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Trademarks	200
Customer relationships	1,500
Developed technology	700
Total identifiable assets acquired	7,784
Accounts payable	(31)
Accrued expenses and liabilities	(67)
Deferred revenue	(243)
Other current liabilities	(4,307)
Total liabilities assumed	(4,648)
Net identifiable assets acquired	3,136
Goodwill	3,490
Purchase price	6,626
Less: cash acquired	(3,485)
Net purchase price	\$3,141

Acquisition related intangibles included in the above table are finite-lived and are being amortized on a straight-line basis over their estimated lives, which approximates the pattern in which the economic benefits of the intangible assets are expected to be realized, as follows (in thousands):

	Gross Purchased	Estimated Useful Life
	Intangible Assets	(in Years)
Trademarks	\$ 200	5
Customer relationships	1,500	10
Developed technology	700	10
	\$ 2,400	

Goodwill represents the excess of the purchase price over the fair value of the net tangible and intangible assets acquired. The acquisition of TSS resulted in \$3.5 million of goodwill which is not deductible for tax purposes. With the addition of the TSS security software for mobile devices, the Company believes this goodwill largely reflects the synergistic strengthening of its Identity offerings providing complete solutions for secure and convenient logical access across smart cards and derived credentials on Apple iOS and Android mobile devices. In accordance with ASC 350, goodwill will not be amortized but is tested for impairment at least annually in the fourth quarter. See Note 5, Goodwill and Intangible Assets.

The results of operations of TSS for the period from the acquisition date through December 31, 2018 are included in the accompanying consolidated statements of operations. Pursuant to ASC 805, the Company incurred and expensed approximately \$208,000 in acquisition and transitional costs associated with the acquisition of TSS during the year ended December 31, 2018 which were primarily general and administrative expenses.

4. Fair Value Measurements

The Company determines the fair values of its financial instruments based on a fair value hierarchy, which requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The classification of a financial asset or liability within the hierarchy is based upon the lowest level input that is significant to the fair value measurement. Under ASC Topic 820, Fair Value Measurement and Disclosures (“ASC 820”), the fair value hierarchy prioritizes the inputs into three levels that may be used to measure fair value:

- Level 1 – Quoted prices (unadjusted) for identical assets and liabilities in active markets;
- Level 2 – Inputs other than quoted prices in active markets for identical assets and liabilities that are observable either directly or indirectly; and
- Level 3 – Unobservable inputs.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

As of December 31, 2018 and 2017, there were no assets or liabilities that are measured and recognized at fair value on a recurring basis. There were nominal cash equivalents as of December 31, 2018 and none as of December 31, 2017.

The Company's only liabilities measured at fair value on a recurring basis are the contingent consideration associated with the acquisitions of 3VR and TSS. The fair value of the earn-out consideration is based on achieving certain revenue and profit targets as defined under the respective merger agreements. The valuation of the earn-out consideration is classified as a Level 3 measurement as it is based on significant unobservable inputs and involves management judgment and assumptions about achieving revenue and profit targets and discount rates. The unobservable inputs used in the measurement of the earn-out consideration are highly sensitive to fluctuations and any changes in the inputs or the probability weighting thereof could significantly change the measured value of the earn-out consideration at each reporting period. As of December 31, 2018 the value attributed to earn-out consideration was deemed to be de minimus.

Assets and Liabilities Measured at Fair Value on a Non-recurring Basis

Certain of the Company's assets, including goodwill, intangible assets, and privately-held investments, are measured at fair value on a nonrecurring basis if impairment is indicated. Purchased intangible assets are measured at fair value primarily using discounted cash flow projections. For additional discussion of measurement criteria used in evaluating potential impairment involving goodwill and intangible assets, refer to Note 5, Goodwill and Intangible Assets.

Privately-held investments, which are normally carried at cost, are measured at fair value due to events and circumstances that the Company identified as significantly impacting the fair value of investments. The Company estimates the fair value of its privately-held investments using an analysis of the financial condition and near-term prospects of the investee, including recent financing activities and the investee's capital structure.

As of December 31, 2018 and 2017, the Company had \$0.3 million of privately-held investments measured at fair value on a nonrecurring basis which were classified as Level 3 assets due to the absence of quoted market prices and inherent lack of liquidity. The Company reviews its investments to identify and evaluate investments that have an indication of possible impairment. The Company adjusts the carrying value for its privately-held investments for any impairment if the fair value is less than the carrying value of the respective assets on an other-than-temporary basis. The amount of privately-held investments is included in other assets in the accompanying consolidated balance sheets.

As of December 31, 2018 and 2017, there were no liabilities that are measured and recognized at fair value on a non-recurring basis.

Assets and Liabilities Not Measured at Fair Value

The carrying amounts of the Company's accounts receivable, prepaid expenses and other current assets, accounts payable, financial liabilities and other accrued liabilities approximate fair value due to their short maturities.

5. Goodwill and Intangible Assets

Goodwill

The following table summarizes the carrying amount of goodwill resulting from the acquisitions of 3VR and TSS (in thousands):

	Premises	Identity	Total
Balance at December 31, 2017	\$ —	\$ —	\$ —
Acquisition of businesses	5,796	3,490	9,286
Balance at December 31, 2018	\$ 5,796	\$ 3,490	\$ 9,286

In accordance with ASC 350, the Company tests goodwill for impairment on an annual basis, in the fourth quarter, or whenever events or changes in circumstances indicate that the carrying amount of these assets may not be recoverable. In testing for goodwill impairment, the Company compares the fair value of its reporting unit to its carrying value including the goodwill of that unit. If the carrying value, including goodwill, exceeds the reporting unit's fair value, the Company will recognize an impairment loss for the amount by which the carrying amount exceeds the reporting unit's fair value. During the quarter ended December 31, 2018, the Company noted no indicators of goodwill impairment and concluded no further testing necessary.

Intangible Assets

The following table summarizes the gross carrying amount and accumulated amortization for intangible assets resulting from acquisitions (in thousands):

	Trademarks	Developed Technology	Customer Relationships	Total
Amortization period (in years)	5	10 - 12	4 - 12	
Gross carrying amount at December 31, 2017	\$ —	\$ 4,600	\$ 10,639	\$ 15,239
Accumulated amortization	0	(3,257)	(7,617)	(10,874)
Intangible assets, net at December 31, 2017	\$ —	\$ 1,343	\$ 3,022	\$ 4,365
Gross carrying amount at December 31, 2018	\$ 600	\$ 8,300	\$ 15,039	\$ 23,939
Accumulated amortization	(77)	(3,978)	(8,904)	(12,959)
Intangible assets, net at December 31, 2018	\$ 523	\$ 4,322	\$ 6,135	\$ 10,980

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Each period, the Company evaluates the estimated remaining useful lives of purchased intangible assets and whether events or changes in circumstances warrant a revision to the remaining period of amortization. If a revision to the remaining period of amortization is warranted, amortization is prospectively adjusted over the remaining useful life of the intangible asset. Intangible assets subject to amortization are amortized on a straight-line basis over their useful lives as outlined in the table above. The Company performs an evaluation of its amortizable intangible assets for impairment at the end of each reporting period. The Company did not identify any impairment indicators during the years ended December 31, 2018 and 2017.

The following table illustrates the amortization expense included in the consolidated statements of operations for the years ended December 31, 2018 and 2017 (in thousands):

	Year Ended December 31,	
	2018	2017
Cost of revenue	\$721	\$448
Selling and marketing	1,364	1,007
Total	\$2,085	\$1,455

The estimated annual future amortization expense for purchased intangible assets with definite lives over the next five years is as follows (in thousands):

2019	\$2,386
2020	2,385
2021	930
2022	930
2023	853
Thereafter	3,496
Total	\$10,980

6. Balance Sheet Components

The Company's inventories are stated at the lower of cost or market. Inventories consist of (in thousands):

	December 31,	
	2018	2017
Raw materials	\$4,598	\$3,700
Work-in-progress	77	22
Finished goods	8,956	7,404
Total	\$13,631	\$11,126

Property and equipment, net consists of (in thousands):

	December 31,	
	2018	2017
Building and leasehold improvements	\$1,250	\$1,917
Furniture, fixtures and office equipment	1,806	1,771
Plant and machinery	9,484	9,411
Purchased software	2,167	2,050
Total	14,707	15,149
Accumulated depreciation	(12,083)	(13,106)
Property and equipment, net	\$2,624	\$2,043

The Company recorded depreciation expense of \$1.1 million and \$1.3 million during the years ended December 31, 2018 and 2017, respectively.

Other accrued expenses and liabilities consist of (in thousands):

	December 31,	
	2018	2017
Accrued professional fees	\$1,504	\$1,065
Customer deposits	1,517	—
Accrued warranties	316	—
Other accrued expenses	1,940	955
Total	\$5,277	\$2,020

7. Long-Term Payment Obligation

Hirsch Acquisition – Secure Keyboards and Secure Networks. Prior to the 2009 acquisition of Hirsch by the Company, effective November 1994, Hirsch had entered into a settlement agreement (the “1994 Settlement Agreement”) with two limited partnerships, Secure Keyboards, Ltd. (“Secure Keyboards”) and Secure Networks, Ltd. (“Secure Networks”). At the time, Secure Keyboards and Secure Networks were related to Hirsch through certain common shareholders and limited partners, including Hirsch’s then President Lawrence Midland, who resigned as President of the Company effective July 31, 2014. Immediately following the acquisition, Mr. Midland owned 30% of Secure Keyboards and 9% of Secure Networks. Secure Networks was dissolved in 2012 and Mr. Midland owned 24.5% of Secure Keyboards upon his resignation effective July 31, 2014.

On April 8, 2009, Secure Keyboards, Secure Networks and Hirsch amended and restated the 1994 Settlement Agreement to replace the royalty-based payment arrangement under the 1994 Settlement Agreement with a new, definitive installment payment schedule with contractual payments to be made in future periods through 2020 (the “2009 Settlement Agreement”). The Company was not an original party to the 2009 Settlement Agreement as the acquisition of Hirsch occurred subsequent to the 2009 Settlement Agreement being entered into. The Company has, however, provided Secure Keyboards and Secure Networks with a limited guarantee of Hirsch’s payment obligations under the 2009 Settlement Agreement (the “Guarantee”). The 2009 Settlement Agreement and the Guarantee became effective upon the acquisition of Hirsch on April 30, 2009. The Company’s annual payment to Secure Keyboards and Secure Networks in any given year under the 2009 Settlement Agreement is subject to an increase based on the percentage increase in the Consumer Price Index during the previous calendar year.

The final payment to Secure Networks was made on January 30, 2012 and the final payment to Secure Keyboards is due on January 30, 2021. The Company’s payment obligations under the 2009 Settlement Agreement will continue through the calendar year period ending December 31, 2020, unless the Company elects at any time on or after January 1, 2012 to earlier satisfy its obligations by making a lump-sum payment to Secure Keyboards. The Company does not intend to make a lump-sum payment and therefore a portion of the payment obligation amount is classified as a long-term liability.

The Company included \$0.2 million and \$0.3 million of interest expense during the years ended December 31, 2018 and 2017, respectively, in its consolidated statements of operations for interest accreted on the long-term payment obligation.

The ongoing payment obligation in connection with the Hirsch acquisition as of December 31, 2018 is as follows (in thousands):

2019	\$1,266
2020	1,408
2021	364
Present value discount factor	(153)
Total	2,885
Less: Current portion - payment obligation	(1,025)
Long-term payment obligation	\$1,860

8. Financial Liabilities

Financial liabilities consist of (in thousands):

	December 31, 2018	2017
Notes payable	\$ 2,000	\$ —
Term loan	—	5,000
Revolving loan facility	11,579	8,736
Total before discount and debt issuance costs	13,579	13,736
Less: Current portion of notes payable	(2,000)	—
Less: Current portion of financial liabilities	(11,554)	(9,829)
Less: Current portion of unamortized discount and debt issuance costs	(25)	(404)
Less: Long-term portion of unamortized discount and debt issuance costs	—	(582)
Long-term financial liabilities	\$ —	\$ 2,921

On February 8, 2017, the Company entered into Loan and Security Agreements with East West Bank (“EWB”) and Venture Lending & Leasing VII, Inc. and Venture Lending & Leasing VIII, Inc. (collectively referred to as “VLL7 and VLL8”). The Loan and Security agreement, as amended, with EWB provides for a \$16.0 million revolving loan facility (the “Revolving Loan Facility”), and the Loan and Security Agreement with a VLL7 & VLL8 provided a \$10.0 million term loan facility (“Term Loan Facility”). In connection with the closing of such agreements, the Company repaid all outstanding amounts under its credit agreement with its previous lender.

The Revolving Loan Facility, as amended, bears interest at prime rate plus 1.0%, matured and became due and payable on February 8, 2019 and included a non-formula line of credit sublimit of up to \$3.0 million. Interest is payable monthly beginning on March 1, 2017. On February 6, 2019, the Company entered into an amendment (the “Tenth Amendment”) to its Loan and Security Agreement with EWB. Under the Tenth Amendment, the Revolving Loan Facility under the Loan and Security Agreement was increased from \$16.0 million to \$20.0 million, the interest rate was reduced from prime rate plus 1.0% to prime rate plus 0.75%, the maturity date was extended to February 8, 2021, and certain financial covenants were amended, including covenants with respect to minimum EBITDA levels. The Company may voluntarily prepay amounts outstanding under the Revolving Loan Facility, without prepayment charges. In the event the Revolving Loan Facility is terminated prior to its maturity, the Company would be required to pay an early termination fee in the amount of 1.0% of the revolving line. Additional borrowing requests under the Revolving Loan Facility are subject to various customary conditions precedent, including satisfaction of a borrowing base test as more fully described in the Revolving Loan Facility.

On December 28, 2017, the Company paid down an aggregate principal amount of \$5.0 million of the \$10.0 million outstanding principal balance of its Term Loan Facility. The Company paid to VLL7 and VLL8 approximately \$5.9

million, consisting of \$5.0 million in outstanding principal, and \$0.9 million of accrued and unpaid interest outstanding at the prepayment date, together with all scheduled interest that would have accrued and been payable through the stated maturity of the Term Loan. As a result, the Company recorded a loss on extinguishment of debt totaling \$1.8 million, representing the difference between the reacquisition price of the repaid portion of the Term Loan and the its net carrying amount.

On May 31, 2018, the Company paid off the remaining amounts payable under its \$10.0 million principal amount Term Loan under the Loan and Security Agreement with VLL7 and VLL8. The Company paid to VLL7 and VLL8 approximately \$5.2 million, consisting of \$4.6 million in outstanding principal, and \$0.6 million of accrued and unpaid interest outstanding at the prepayment date together with all the scheduled interest that would have accrued and been payable through the stated maturity of the Term Loan. As a result, the Company recorded a loss on extinguishment of debt totaling \$1.4 million, representing the difference between the reacquisition price of the repaid portion of the Term Loan and its carrying amount.

The Revolving Loan Facility contains customary representations and warranties and customary affirmative and negative covenants, including, limits or restrictions on the Company's ability to incur liens, incur indebtedness, make certain restricted payments, merge or consolidate and dispose of assets. The Revolving Loan Facility also contains various financial covenants, including but not limited to a liquidity covenant requiring the Company to maintain at least \$4.0 million of cash. In addition, the Revolving Loan Facility contains customary events of default that entitle EWB to cause any or all of the Company's indebtedness under the Revolving Loan Facility to become immediately due and payable. The events of default (some of which are subject to applicable grace or cure periods), include, among other things, non-payment defaults, covenant defaults, cross-defaults to other material indebtedness, bankruptcy and insolvency defaults and material judgment defaults. Upon the occurrence and during the continuance of an event of default, EWB may terminate its lending commitment and/or declare all or any part of the unpaid principal of all loans, all interest accrued and unpaid thereon and all other amounts payable under the Loan and Security Agreement to be immediately due and payable.

As of December 31, 2018, the Company was in compliance with all financial covenants under the Revolving Loan Facility.

The proceeds of the Term Loan and the initial draw under the Revolving Loan Facility, after payment of fees and expenses, were used to repay all outstanding amounts under the credit agreement with the Company's previous lender. In connection with the repayment, warrants to purchase an aggregate of 400,000 shares of common stock issued to the Company's previous lender were cancelled. The proceeds of any additional draws under the Revolving Loan Facility will be used for working capital and other general corporate purposes.

On February 14, 2018, the Company completed the acquisition of 3VR. As part of the purchase price consideration paid in the acquisition of 3VR, the Company issued subordinated unsecured promissory notes ("notes payable") in the aggregate principal amount of \$2.0 million, with an annual interest rate of 3.0%, payable on the one year anniversary of the closing date. On February 14, 2019, the Company repaid the noteholders an aggregate principal amount, including accrued interest, of \$2,060,000.

On February 21, 2018, the Company paid 3VR's lender \$3.6 million in full repayment of all indebtedness outstanding of 3VR.

9. Income Taxes

Loss before income taxes for domestic and non-U.S. operations is as follows (in thousands):

	2018	2017
Loss from operations before income taxes and noncontrolling interest:		
U.S.	\$(6,330)	\$(5,617)
Foreign	1,782	(2,749)
Loss from operations before income taxes and noncontrolling interest	\$(4,548)	\$(8,366)

The (provision) benefit for income taxes consisted of the following (in thousands):

	December 31,	
	2018	2017
Deferred:		
Federal	\$—	\$—
State	—	—
Foreign	—	—
	\$—	\$—
Current		
Federal	\$23	\$—
State	(26)	(33)
Foreign	(152)	247
Total current	(155)	214
Total (provision) benefit for income taxes	\$(155)	\$214

Significant items making up deferred tax assets and liabilities are as follows (in thousands):

	December 31,	
	2018	2017
Deferred tax assets:		
Allowances not currently deductible for tax purposes	\$902	\$1,177
Net operating loss carryforwards	59,606	56,989
Interest carryforwards	828	—
Stock options	1,176	873
Accrued and other	1,568	1,104
	64,080	60,143
Less valuation allowance	(60,824)	(58,248)
	3,256	1,895
Deferred tax liability:		
Depreciation and amortization	(1,945)	(1,085)
State income taxes	(1,311)	(810)
	(3,256)	(1,895)
Net deferred tax liability	\$—	\$—

Management assesses the available positive and negative evidence to estimate if sufficient future taxable income will be generated to use the existing deferred tax assets. A significant piece of objective negative evidence evaluated was the cumulative loss incurred over the three-year period ended December 31, 2018. Such objective evidence limits the ability to consider other subjective evidence such as the Company's projections for future growth.

A valuation allowance of \$60.8 million and \$58.3 million at December 31, 2018 and December 31, 2017, respectively, has been recorded to offset the related net deferred tax assets as the Company is unable to conclude that it is more likely than not that such deferred tax assets will be realized. The net deferred tax liabilities are primarily from foreign tax liabilities as well as intangibles acquired as a result of the acquisition of Hirsch and 3VR, which are not deductible for tax purposes.

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 flat 21% rate. The rate reduction took effect on January 1, 2018.

At December 31, 2017, the Company had a net deferred tax asset before valuation allowance totaling \$58.3 million. Under generally accepted accounting principles, the Company uses the asset and liability method of accounting for income taxes. Under this method, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The Company's net deferred tax asset before valuation allowance of \$58.3 million was determined at December 31, 2017 based on the current enacted federal tax rate of 21%, or the rate of the statutory rate applicable to the respective foreign jurisdiction. As a result of the reduction in the corporate income tax rate from 35% to 21% under the Act, the Company has calculated a decrease in net deferred assets of \$15.8 million and a corresponding decrease of \$15.8 million in the valuation allowance which resulted in a net zero effect to the Company's consolidated financial statements at December 31, 2017.

The Act also amended Internal Revenue Code Section 172 which governs the utilization of net operating losses (“NOLs”). Prior rules generally allowed NOLs to be carried back two years and forward 20 years, after which time the NOLs expired. The amendment by the Act disallows any carryback of NOLs arising in a taxable year ending after December 31, 2017, but allows an indefinite carryforward of such losses, but such losses may only offset a maximum of 80 percent of a taxpayer’s pre-NOL taxable income.

Further, the Act provides for a one-time "deemed repatriation" of accumulated foreign earnings for the year ended December 31, 2017. We finalized our calculations of the transition tax liability during 2018 and no repatriation tax was provided with respect to undistributed earnings of foreign subsidiaries due to a net foreign earnings and profits deficit position.

Section 951A is a new provision under the Act which requires a US shareholder of a controlled foreign corporation to include in taxable income the shareholder’s share of global intangible low-taxed income (“GILTI”) for the year. The Company has determined that the new Section 951A provisions do apply to its operations and relationships with its controlled foreign corporations “(CFCs)”. The Company’s GILTI calculation resulted in no GILTI income in 2018 due to net tested losses at its CFCs. As of December 31, 2018, the Company had net operating loss carryforwards of \$117.4 million for federal, \$63.8 million for state and \$120.7 million for foreign income tax purposes. Certain of the Company’s federal, state and foreign loss carryforwards have started expiring and will continue to expire through 2038 if not utilized.

The Tax Reform Act of 1986 (the "Tax Reform Act") limits the use of net operating loss and tax credit carryforwards in certain situations where changes occur in stock ownership. The Company completed its acquisition of Bluehill ID AG on January 4, 2010, which resulted in a stock ownership change as defined by the Tax Reform Act. The Company also completed its acquisition of 3VR on February 14, 2018, which resulted in a stock ownership change as defined by the Tax Reform Act. These transactions resulted in limitations on the annual utilization of federal and state net operating loss carryforwards and credits. As a result, the Company reevaluated its available deferred tax assets, and the loss carryforward and credit amounts, excluding the valuation allowance presented above have been adjusted for the limitation resulting from the change in ownership in accordance with the provisions of the Tax Reform Act.

The provision for income taxes reconciled to the amount computed by applying the statutory federal tax rate to the loss before income taxes from operations is as follows (in thousands):

	December 31,	
	2018	2017
Income tax (benefit) provision at statutory federal tax rate of 21% and 34% for 2018 and 2017, respectively	\$955	\$2,845
State taxes, net of federal benefit	(21)	(22)
Foreign taxes provisions provided for at rates other than U.S statutory rate	222	(687)
Federal rate adjustment	—	(15,780)
Change in valuation allowance	(1,141)	13,931
Permanent differences	108	200
Acquisition costs	(115)	—
Other	(163)	(273)
Total (provision) benefit for income taxes	\$(155)	\$214

The Company applies the provisions of, and accounted for uncertain tax positions in accordance with, ASC 740. ASC 740 clarifies the accounting for uncertainty in income taxes recognized in an entity's financial statements. It prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken or expected to be taken in a tax return. ASC 740 also provides guidance on de-recognition, classification, interest and penalties, accounting in interim periods, disclosure, and transition.

A reconciliation of the beginning and ending amount of unrecognized tax benefits with an impact on the Company's consolidated balance sheets or results of operations is as follows (in thousands):

	2018	2017
Balance at January 1	\$2,878	\$2,874
Additions based on tax positions related to the current year	2	2
Additions for tax positions of prior years	—	2
Reductions in prior year tax positions	(1)	—
Balance at December 31	\$2,879	\$2,878

While timing of the resolution and/or finalization of tax audits is uncertain, the Company does not believe that its unrecognized tax benefits as presented in the above table would materially change in the next 12 months.

As of December 31, 2018 and 2017, the Company recognized liabilities for unrecognized tax benefits of \$2.8 million and \$2.8 million, respectively, which were accounted for as a decrease to deferred tax assets. Since there was a full valuation allowance against these deferred tax assets, there was no impact on the Company's consolidated balance sheets or results of operations for the years 2018 and 2017. Also the subsequent recognition, if any, of these previously unrecognized tax benefits would not affect the effective tax rate. Such recognition would result in adjustments to other tax accounts, primarily deferred taxes. The amount of unrecognized tax benefits which, if recognized, would affect the tax rate is \$0.1 million as of December 31, 2018 and 2017.

The Company recognizes interest accrued related to unrecognized tax benefits and penalties as income tax expense. During fiscal 2018, the Company recorded a reduction to accrued penalties of \$1,000 and an increase in accrued interest of \$1,000 related to the unrecognized tax benefits noted above. As of December 31, 2018, the Company has recognized a total liability for penalties of \$13,000 and interest of \$33,000. During fiscal 2017, the Company recorded an increase in accrued penalties of \$1,000 and an increase in accrued interest of \$4,000 related to the unrecognized tax benefits noted above. As of December 31, 2017, the Company has recognized a total liability for penalties of \$14,000 and interest of \$32,000.

The Company files U.S. federal, U.S. state and foreign tax returns. As a result of a federal tax examination for tax year ended December 31, 2015, which was completed in the year ended December 31, 2018, the Company adjusted NOLs within tax years 2015 and 2016. The adjustments had no net impact on its deferred tax assets or income tax provision. The Company generally is no longer subject to tax examinations for years prior to 2013. However, if loss carryforwards of tax years prior to 2013 are utilized in the U.S., these tax years may become subject to investigation by the tax authorities.

10. Stockholders' Equity

Preferred Stock

The Company is authorized to issue 10,000,000 shares of preferred stock, 40,000 of which have been designated as Series A Participating Preferred Stock, par value \$0.001 per share, and 5,000,000 of which have been designated as Series B Non-Voting Convertible Preferred Stock, par value \$0.001 per share (the "Series B Preferred Stock"). No shares of the Company's Series A Participating Preferred Stock were outstanding as of December 31, 2018 and 2017. During 2017, the Company's board of directors (the "Board") authorized the issuance of up to 5,000,000 shares of the Series B Preferred Stock, 5,000,000 and 3,000,000 of which were outstanding as of December 31, 2018 and 2017, respectively.

The Board may from time to time, without further action by the Company's stockholders, direct the issuance of shares of preferred stock in other series and may, at the time of issuance, determine the rights, preferences and limitations of each series, including voting rights, dividend rights and redemption and liquidation preferences. Satisfaction of any dividend preferences of outstanding shares of preferred stock would reduce the amount of funds available for the payment of dividends on shares of the Company's common stock. Holders of shares of preferred stock may be entitled to receive a preference payment in the event of any liquidation, dissolution or winding-up of the Company before any payment is made to the holders of shares of the Company's common stock. Upon the affirmative vote of the Board, without stockholder approval, the Company may issue shares of preferred stock with voting and conversion rights which could adversely affect the holders of shares of its common stock.

Series B Preferred Stock and Private Placement

On December 20, 2017, the Company entered into a Securities Purchase Agreement (the "Purchase Agreement") with each of 21 April Fund, Ltd. and 21 April Fund, LP (collectively, the "Purchasers"), pursuant to which the Company, in a private placement, agreed to issue and sell to the Purchasers an aggregate of up to 5,000,000 shares of the Series B Preferred Stock, \$0.001 par value per share (collectively referred to as the "Shares"). The Purchasers agreed to purchase an aggregate of 3,000,000 Shares ("Tranche 1") at a price of \$4.00 per share in cash at the initial closing of the transaction, and at the sole option of the Company, an additional 2,000,000 Shares at a price of \$4.00 per share in cash at a second closing, if any (the "Private Placement"). The total purchase price payable to the Company was \$20,000,000, of which \$12,000,000 was paid at the initial closing. On May 30, 2018, the Company issued 2,000,000 Shares ("Tranche 2"), at a price of \$4.00 per share in the second closing of the Private Placement. Gross proceeds to the Company from the second closing were approximately \$8.0 million, before deducting fees and certain expenses payable by the Company. The proceeds from the issuance of the Shares are required to be used to pay off existing debt obligations of the Company and to fund future acquisitions of technology, business and other assets by the Company.

Each Share shall be convertible into the Company's common stock (i) following the sixth (6th) anniversary of the initial closing of the Private Placement or (ii) if earlier, during the thirty (30) day period following the last trading day of any period of three (3) or more consecutive trading days that the closing market price of the Company's common stock exceeds \$10.00. Each Share is convertible at the option of the holder of the Shares into such number of shares of the Company's common stock determined by taking the accreted value of such Share (purchase price plus accrued but

unpaid dividends) and dividing such value by the stated value of such Share (\$4.00 per share, subject to adjustment for dilutive issuances, stock splits, stock dividends and the like); provided, however, that the Company shall not convert any Shares if doing so would cause the holder thereof, along with its affiliates, to beneficially own in excess of 19.9% of the outstanding common stock immediately after giving effect to the applicable conversion (the “Ownership Limitation”), unless waiver of this restriction has been effected by the holder requesting conversion of Shares.

Based on the current conversion price, the outstanding shares of Series B Preferred Stock as of December 31, 2018 would be convertible into 5.0 million shares of the Company’s common stock. However, the conversion rate will be subject to adjustment in the event of certain instances, such as if the Company issues shares of its common stock at a price less than \$4.00 per common share, subject to a minimum conversion price of \$3.27 per share. As of December 31, 2018, none of the contingent conditions to adjust the total common shares to convert the Shares had been met.

Each Share is entitled to an annual dividend of 5% for the first six (6) years following the issuance of such Share and 3% for each year thereafter, with the Company retaining the option to settle each year's dividend after the tenth (10th) year in cash. The dividends accrue and are payable in kind upon such time as the Shares convert into the Company's common stock. In general, the Shares are not entitled to vote except in certain limited cases, including in change of control transactions where the expected price per share distributable to the Company's stockholders is expected to be less than \$4.00 per share. The Certificate of Designation with respect to the Series B Preferred Stock further provides that in the event of, among other things, any change of control, liquidation or dissolution of the Company, the holders of the Series B Preferred Stock will be entitled to receive, on a pari passu basis with the holders of the common stock, the same amount and form of consideration that the holders of the Company's common stock receive (on an as-if-converted-to-common-stock basis and without regard to the Ownership Limitation).

Series B Preferred Stock Dividend Accretion

The following table summarizes Series B Preferred Stock and the accretion of dividends activity for the year ended December 31, 2018 (in thousands):

	Tranche 1	Tranche 2	Total
Series B Preferred Stock			
Balance at December 31, 2017	\$ 12,000	\$ —	\$ 12,000
Issuance of Series B Preferred Stock	—	8,000	8,000
Cumulative dividends on Series B Preferred Stock	600	233	833
Balance at December 31, 2018	\$ 12,600	\$ 8,233	\$ 20,833
Number of Common Shares Issuable Upon Conversion			
Balance at December 31, 2017	3,000	—	3,000
Issuance of Series B Preferred Stock	—	2,000	2,000
Cumulative dividends on Series B Preferred Stock	150	58	208
Balance at December 31, 2018	3,150	2,058	5,208

Sale of Common Stock

In May 2017, the Company sold an aggregate of 2,845,360 shares of its common stock at a public offering price of \$4.85 per share in an underwritten public offering. The Company received net proceeds of approximately \$12.6 million from the sale of the common stock in the public offering, after deducting the underwriting discount and other offering related expenses of \$1.2 million.

Common Stock Warrants

On August 13, 2014, in connection with the Company's entry into a consulting agreement, the Company issued a consultant a warrant to purchase up to 85,000 shares of the Company's common stock at a per share exercise price of \$10.70 (the "2014 Consultant Warrant"). One fourth of the shares under the warrant are exercisable for cash three months from the date the 2014 Consultant Warrant was issued and quarterly thereafter. The 2014 Consultant Warrant expires on August 13, 2019. In the event of an acquisition of the Company, the 2014 Consultant Warrant shall terminate and no longer be exercisable as of the closing of the acquisition. As of December 31, 2018, none of the shares under the 2014 Consultant Warrant had been exercised.

On February 8, 2017, the Company entered into Loan and Security Agreements with each of EWB and VLL7 and VLL8 as discussed in Note 8, Financial Liabilities. The Loan and Security Agreement with EWB provided for a \$10.0 million Revolving Loan Facility, and the Loan Security Agreement with VLL7 and VLL8 provides for a Term Loan Facility in an aggregate principal amount of \$10.0 million. In connection with the Company's Revolving Loan Facility, the Company issued to EWB a warrant (the "EWB Warrant") to purchase up to 40,000 shares of the Company's common stock at a per share exercise price of \$3.64, and in connection with the Company's Term Loan Facility, issued to each of VLL7 and VLL8 a warrant to purchase 290,000 shares of the Company's common stock at a per share exercise price of \$2.00 (the "VLL7 Warrant" and the "VLL8 Warrant," respectively). The Company calculated the fair value of the EWB Warrant, the VLL7 Warrant and the VLL8 Warrant using the Black-Scholes pricing model using the following assumptions: estimated volatility of 78.8%, risk-free interest rate of 1.94%, no dividend yield, and an expected life of five years. The fair values of the EWB Warrant, the VLL7 Warrant and the VLL8 Warrant of \$125,000, \$1,037,500 and \$1,037,500, respectively, were classified as equity as the settlement of the warrants will be in shares and is within the control of the Company. Each of the EWB Warrant, the VLL7 Warrant and the VLL8 Warrant is immediately exercisable for cash or by net exercise and will expire five years after its issuance, or on February 8, 2022. In connection with entering into the Loan and Security Agreements with EWB and VLL7 and VLL8, warrants to purchase an aggregate of 400,000 shares of common stock issued to the Company's previous lender were cancelled.

In connection with securing of the new credit facilities and cancelling of all the warrants previously issued to the previous lender, the Company issued a warrant to a consultant to purchase 60,000 shares of its common stock at an exercise price of \$4.60 per share (the “2017 Consultant Warrant”). The Company calculated the fair value of the 2017 Consultant Warrant using the Black Scholes pricing model using the following assumptions: estimated volatility of 78.8%, risk-free interest rate of 1.22%, no dividend yield, and an expected life of two years. The fair value of the 2017 Consultant Warrant of \$119,000 was classified as equity as the settlement of the warrant will be in shares and is within the control of the Company. The 2017 Consultant Warrant is immediately exercisable for cash or by net exercise and expires two years after its issuance, or on February 8, 2019. On January 30, 2019, the Company issued 10,449 shares of its common stock upon the cashless net exercise of the entire 2017 Consultant Warrant.

Below is a summary of outstanding warrants issued by the Company as of December 31, 2018:

Warrant Type	Number of Shares	Weighted	Issue Date	Expiration Date
	Issuable Upon	Average Exercise		
2014 Consultant Warrant	Exercise 85,000	Price \$ 10.70	August 13, 2014	August 13, 2019
EWB Warrant	40,000	3.64	February 8, 2017	February 8, 2022
VLL7 and VLL8 Warrants	580,000	2.00	February 8, 2017	February 8, 2022
2017 Consultant Warrant	60,000	4.60	February 8, 2017	February 8, 2019
Total	765,000			

Common Stock Reserved for Future Issuance

Common stock reserved for future issuance as of December 31, 2018 was as follows:

Exercise of outstanding stock options, vesting of RSUs, and issuance of RSUs vested but not released	2,389,070
Employee Stock Purchase Plan	293,888
Shares of common stock available for grant under the 2011 Plan	643,138
Noncontrolling interest in Bluehill ID AG	10,355
Warrants to purchase common stock	765,000
Shares of common stock issuable on conversion of Series B Preferred Stock	5,208,333
Total	9,309,784

11. Stock-Based Compensation

Stock Incentive Plans

The Company has a stock-based compensation plan to attract, motivate, retain and reward employees, directors and consultants by providing its Board or a committee of the Board the discretion to award equity incentives to these persons. The Company’s stock-based compensation plan consists of the 2011 Incentive Compensation Plan (the “2011 Plan”), as amended. Shares are no longer available for issuance under the Company’s 2010 Bonus and Incentive Plan (the “2010 Plan”) and 2007 Stock Option Plan (the “2007 Plan”).

On June 6, 2011, the Company's stockholders approved the 2011 Plan, which is administered by the Compensation Committee of the Board. The 2011 Plan provides that stock options, stock units, restricted shares, and stock appreciation rights may be granted to executive officers, directors, consultants, and other key employees. The Company reserved 400,000 shares of common stock under the 2011 Plan, plus 459,956 shares of common stock that remained available for delivery under the 2007 Plan and the 2010 Plan as of June 6, 2011. In aggregate, as of June 6, 2011, 859,956 shares were available for future grant under the 2011 Plan, including shares rolled over from 2007 Plan and 2010 Plan. Subsequent to June 6, 2011 through December 31, 2017, the number of shares of common stock authorized for issuance under the 2011 Plan has been increased by 3.0 million shares. On May 31, 2018, the Company's stockholders approved an amendment to the 2011 Plan to increase the number of shares of common stock authorized for issuance by 500,000 shares.

Stock Options

A summary of activity for the Company's stock options for the year ended December 31, 2018 follows:

	Number	Average Exercise Price per Share	Contractual Term (Years)	Weighted Average Intrinsic Value
Balance at December 31, 2017	672,441	\$ 6.28	7.48	\$ —
Granted	—	—		—
Cancelled or Expired	(48,339)	11.58		—
Exercised	(2,500)	5.20		2,100
Balance at December 31, 2018	621,602	\$ 5.87	6.32	\$ —
Vested or expected to vest at December 31, 2018	619,572	\$ 5.87	6.31	\$ —
Exercisable at December 31, 2018	538,266	\$ 6.10	6.14	\$ —

The following table summarizes information about stock options outstanding as of December 31, 2018:

	Options Outstanding			Options Exercisable	
	Weighted Average			Weighted Average	
	Remaining				
	Number	Contractual Life	Exercise	Number	Exercise
Range of Exercise Prices	Outstanding	(Years)	Price	Exercisable	Price
\$4.36 - \$7.20	472,810	7.22	\$ 4.47	389,474	\$ 4.49
\$7.50 - \$11.30	127,198	3.48	9.42	127,198	9.42
\$12.00 - \$19.70	17,244	3.50	13.60	17,244	13.60
\$21.70 - \$24.20	4,350	2.67	23.27	4,350	23.27
\$4.36 - \$24.20	621,602			538,266	

At December 31, 2018, there was \$0.2 million of unrecognized stock-based compensation expense, net of estimated forfeitures related to unvested stock options, that is expected to be recognized over a weighted-average period of 0.7 years.

Restricted Stock Units

The following is a summary of restricted stock unit ("RSU") activity for the year ended December 31, 2018:

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	Number	Weighted Average
	Outstanding	Fair Value
Balance at December 31, 2017	1,460,044	\$ 3.08
Granted	912,955	4.42
Vested	(606,218)	3.61
Forfeited	(399,151)	2.84
Balance at December 31, 2018	1,367,630	3.81
Shares vested but not released	399,838	3.24

The fair value of the Company's RSUs is calculated based upon the fair market value of the Company's common stock at the date of grant. As of December 31, 2018, there was \$4.7 million of unrecognized compensation cost related to unvested RSUs granted, which is expected to be recognized over a weighted average period of 2.8 years.

Stock-Based Compensation Expense

The following table summarizes stock-based compensation expense related to stock options and RSUs included in the consolidated statements of operations for the years ended December 31, 2018 and 2017 (in thousands):

	Year Ended December 31,	
	2018	2017
Cost of revenue	\$89	\$82
Research and development	488	480
Selling and marketing	689	651
General and administrative	1,380	1,267
Total	\$2,646	\$2,480

Restricted Stock Unit Net Share Settlements

During the years ended December 31, 2018 and 2017, the Company repurchased 141,670 and 178,207 shares, respectively of common stock surrendered to the Company to satisfy tax withholding obligations in connection with the vesting of RSUs issued to employees.

12. Net Loss per Common Share Attributable to Identiv Stockholders' Equity

Basic and diluted net loss per share is based upon the weighted average number of common shares outstanding during the period. The following table sets forth the computation of basic EPS:

	Year Ended December 31,	
	2018	2017
Numerator:		
Net loss attributable to Identiv, Inc.	\$(4,708)	\$(8,138)
Accretion of Series B Preferred Stock dividends	(833)	—
Numerator for basic EPS - income available to common stockholders	(5,541)	(8,138)
Denominator:		
Weighted average shares outstanding	15,654	13,273
Net loss per share - basic	\$(0.35)	\$(0.61)

The following common stock equivalents have been excluded from diluted net loss per share for the fiscal years ended December 31, 2018 and 2017 because their inclusion would be anti-dilutive:

	December 31,
	2018 2017

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Shares of common stock subject to outstanding RSUs	1,367,630	1,460,044
Shares of common stock subject to outstanding stock options	621,602	672,441
Shares of common stock subject to outstanding warrants	765,000	765,000
Shares of common stock reserved to acquire remaining share of noncontrolling interest	10,355	10,355
Shares of common stock issuable upon conversion of Series B Preferred Stock	5,208,333	3,000,000
Total	7,972,920	5,907,840

13. Segment Reporting and Geographic Information

ASC Topic 280, Segment Reporting (“ASC 280”) establishes standards for the reporting by public business enterprises of information about operating segments, products and services and by geographic areas. The method for determining what information to report is based on the way management organizes the operating segments within the Company for making operating decisions and assessing financial performance. An operating segment is defined as a component of an enterprise that engages in business activities from which it may earn revenue and incur expenses and about which separate financial information is available to its chief operating decision makers (“CODM”). The Company’s CODM is considered its CEO.

In the fourth quarter of 2018, the Company realigned the way in which it organized its operating segments in making operating decisions and assessing financial performance by combining the Identity and Credential segments. The combined segment is referred to as the Identity segment. All comparative segment information for fiscal 2017 has been reclassified to conform to the fiscal 2018 presentation.

The CODM reviews financial information and business performance for each operating segment. The Company evaluates the performance of its operating segments at the revenue and gross profit levels. The Company does not report total assets, capital expenditures or operating expenses by operating segment as such information is not used by the CODM for purposes of assessing performance or allocating resources or has not been accounted for at the segment level.

Net revenue and gross profit information by segment for the years ended December 31, 2018 and 2017 are as follows (in thousands):

	Year Ended December 31,	
	2018	2017
Premises:		
Net revenue	\$34,587	\$24,154
Gross profit	19,373	13,669
Gross profit margin	56 %	57 %
Identity:		
Net revenue	43,555	36,065
Gross profit	13,959	8,491
Gross profit margin	32 %	24 %
Total:		
Net revenue	78,142	60,219
Gross profit	33,332	22,160
Gross profit margin	43 %	37 %
Operating expenses:		
Research and development	7,235	6,146
Selling and marketing	16,391	13,452
General and administrative	10,824	7,241
Restructuring and severance	747	(49)
Total operating expenses:	35,197	26,790
Loss from operations	(1,865)	(4,630)
Non-operating income (expense):		
Interest expense, net	(1,518)	(2,590)
Loss on extinguishment of debt, net	(1,369)	(788)

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Foreign currency gains (losses), net	204	(358)
Loss before income taxes and noncontrolling interest	\$(4,548)	\$(8,366)

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Geographic net revenue is based on the customer's ship-to location. Information regarding net revenue by geographic region is as follows (in thousands):

	Year Ended December 31,	
	2018	2017
Americas	\$60,153	\$40,018
Europe and the Middle East	9,943	7,887
Asia-Pacific	8,046	12,314
Total	\$78,142	\$60,219
Revenues:		
Americas	77 %	67 %
Europe and the Middle East	13 %	13 %
Asia-Pacific	10 %	20 %
Total	100 %	100 %

Long-lived assets by geographic location as of December 31, 2018 and 2017 are as follows (in thousands):

	December 31,	
	2018	2017
Property and equipment, net:		
Americas	\$1,060	\$868
Europe and the Middle East	43	89
Asia-Pacific	1,521	1,086
Total property and equipment, net	\$2,624	\$2,043

The Company's net revenue is represented by the following product categories as of December 31, 2018 and 2017 (in thousands):

	Year Ended December 31,	
	2018	2017
Physical access and identity control readers	\$21,680	\$18,601
Controller panels	14,509	14,637
Access cards and provisioning	14,237	8,396
Tags and transponders	12,953	13,089
Video technology and analytics	6,293	—
Services	6,152	3,816
Third party access control products	1,205	1,014
Software	1,113	666
Total	\$78,142	\$60,219

14. Restructuring and Severance

On February 14, 2018, the Company acquired 3VR. As a result of the acquisition, during the year ended December 31, 2018, the Company incurred restructuring and severance expenses of \$0.6 million, consisting of facility rental related costs of \$0.3 million, and severance related costs of \$0.3 million. In the third quarter of 2018, the Company entered into an agreement with a tenant to sublease the 3VR office facility over the remaining term of the original lease. In the fourth quarter of 2018, the Company recorded a restructuring accrual of \$0.1 million for future its rental payment obligation associated with vacated office space at its Fremont, California facility.

In 2017, the Company recorded a credit resulting from actual expenditures being less than originally accrued associated with the worldwide restructuring plan implemented in the first quarter of 2016.

Restructuring and severance activities during the years ended December 31, 2018 and December 31, 2017 were as follows (in thousands):

	Year Ended December 31,	
	2018	2017
Balance at beginning of period	\$—	\$237
Restructuring expense incurred for the period	747	(49)
Payments during the period	(618)	(188)
Balance at end of period	\$129	\$—

15. Legal Proceedings

On January 1, 2016, certain of the Company's present and former officers and directors were named as defendants, and the Company was named as nominal defendant, in a shareholder derivative lawsuit filed in the United States District Court for the Northern District of California, entitled Oswald v. Humphreys, et al., Case No. 16-cv-00241-CRB, alleging breach of fiduciary duty and waste claims. On January 25, 2016, certain of the Company's present and former officers and directors were named as defendants, and the Company was named as nominal defendant, in a shareholder derivative lawsuit filed in the Superior Court of the State of California, County of Alameda, entitled Chopra v. Hart, et al., Case No. RG16801379, alleging breach of fiduciary duty claims. On February 9, 2016, certain of the Company's present and former officers and directors were named as defendants, and the Company was named as nominal defendant, in a shareholder derivative lawsuit filed in the Superior Court of the State of California, County of Alameda, entitled Wollnik v. Wenzel, et al., Case No. HG16803342, alleging breach of fiduciary duty, corporate waste, gross mismanagement, and unjust enrichment claims. These lawsuits generally allege that the Company made false and/or misleading statements and/or failed to disclose information in certain public filings and disclosures between 2013 and 2015. Each of the lawsuits seeks one or more of the following remedies: unspecified compensatory damages, unspecified exemplary or punitive damages, restitution, declaratory relief, equitable and injunctive relief, and reasonable costs and attorneys' fees. On May 2, 2016, the court in the Chopra lawsuit entered an order staying proceedings in the Chopra lawsuit in favor of the Oswald lawsuit, based on a stipulation to that effect filed by the parties in the Chopra lawsuit on April 28, 2016. Similarly, on June 28, 2016, the court in the Wollnik lawsuit entered a stipulated order staying proceedings in the Wollnik lawsuit in favor of the Oswald lawsuit. On June 17, 2016, the plaintiff in the Oswald lawsuit filed an amended complaint. On August 1, 2016, the Company filed a motion to dismiss for failure by plaintiff to make a pre-lawsuit demand on the Company's board of directors, which motion was heard on October 14, 2016. The judge in the Oswald lawsuit issued an order on November 7, 2016 granting the Company's motion to dismiss, without prejudice. In addition, the court stayed the case so that plaintiff could exercise whatever rights he had under Section 220 of the Delaware General Corporation Law. On or around November 30, 2016, the plaintiff purported to serve a books and records demand under Section 220 of the Delaware General Corporation Law. The Company responded to that demand. On March 21, 2017, the Company and the plaintiff in the Oswald lawsuit filed a stipulation and proposed order lifting the stay of the case, granting the plaintiff leave to amend, and setting a briefing schedule. The plaintiff in the Oswald lawsuit filed his second amended complaint on April 10, 2017. The Company then filed a motion to dismiss that second amended complaint on May 12, 2017. After further briefing and argument, on October 22, 2017, the court issued its written order denying the motion to dismiss on the basis of demand futility. On January 3, 2018, the court entered a stipulated order setting a response and briefing schedule for defendants to the second amended complaint.

Defendants filed motions to dismiss the second amended complaint in the Oswald action under Rule 12(b)(6) on January 16, 2018. After further briefing and argument, on April 13, 2018, the court entered an order granting defendants' motions to dismiss. On April 19, 2018, Plaintiff Oswald filed a motion for leave to file a third amended complaint. On that same date, Plaintiff Chopra, a plaintiff in a related and stayed derivative action in state court, filed a motion to intervene in the Oswald action. After further briefing and argument, on July 16, 2018, the court entered an order granting the Chopra motion to intervene and denying the Oswald motion for leave to file a third amended complaint. After the filing of an unopposed administrative motion for entry of judgment by defendants, on October 1, 2018, the court entered an order granting administrative motion for entry of final judgment and entered final judgment in favor of all named defendants and against plaintiffs Oswald and Chopra. On October 23, 2018, plaintiff Oswald filed a notice of appeal with the Ninth Circuit. Oswald's opening appellate brief was filed on March 4, 2019. In the interim, the state court Chopra and Wollnik actions have remained stayed with periodic status conferences. The next status conferences have been scheduled in the Chopra and Wollnik cases on November 5, 2019 before Judge Seligman. The Company intends to vigorously defend against these lawsuits. The Company cannot currently predict the impact or resolution of each of these lawsuits or reasonably estimate a range of possible loss, if any, which could be material, and the resolution of these lawsuits may harm its business and have a material adverse impact on its financial condition.

From time to time, the Company could become subject to claims arising in the ordinary course of business or could be named a defendant in additional lawsuits. The outcome of such claims or other proceedings cannot be predicted with certainty and may have a material effect on the Company's financial condition, results of operations or cash flows.

16. Commitments and Contingencies

The Company leases its facilities, certain equipment, and automobiles under non-cancelable operating lease agreements. Those lease agreements existing as of December 31, 2018 expire at various dates during the next five years.

The Company recognized rent expense of \$1.9 million and \$1.6 million for the years ended December 31, 2018 and 2017, respectively, in its consolidated statements of operations.

The following table summarizes the Company's principal contractual commitments, excluding the financial liabilities and long-term payment obligation, as of December 31, 2018 (in thousands):

	Operating	Purchase	Other Contractual	
	Leases (a)	Commitments	Commitments	Total
2019	\$ 2,210	\$ 10,893	\$ 153	\$ 13,256
2020	2,050	450	—	2,500
2021	1,706	450	—	2,156
2022	834	450	—	1,284
2023	533	450	—	983
Thereafter	—	—	—	—
Total	\$ 7,333	\$ 12,693	\$ 153	\$ 20,179

(a) Operating lease payments have not been reduced by sublease rentals of \$2.6 million due in the future under noncancelable subleases.

Purchase commitments for inventories are highly dependent upon forecasts of customer demand. Due to the uncertainty in demand from its customers, the Company may have to change, reschedule, or cancel purchases or purchase orders from its suppliers. These changes may lead to vendor cancellation charges on these purchases or contractual commitments.

The Company provides warranties on certain product sales for periods ranging from 12 to 36 months, and allowances for estimated warranty costs are recorded during the period of sale. The determination of such allowances requires the Company to make estimates of product return rates and expected costs to repair or to replace the products under warranty. The Company currently establishes warranty reserves based on historical warranty costs for each product line combined with liability estimates based on the prior 12 months' sales activities. If actual return rates and/or repair and replacement costs differ significantly from the Company's estimates, adjustments to recognize additional cost of sales may be required in future periods. Historically the warranty accrual and the expense amounts have been immaterial.

17. Subsequent Events

On January 2, 2019, the Company completed the purchase of substantially all the assets of the Freedom, Liberty, and Enterphone™ MESH products and services of Viscount Systems, Inc. (“VSI”) and the assumption of certain liabilities (the “Asset Purchase”). Under the terms of the Asset Purchase, the Company was obligated to pay at closing aggregate consideration of approximately \$3.2 million, consisting of (i) approximately \$1.2 million in cash, and (ii) the issuance of shares of the Company’s common stock with a value of approximately \$2.0 million. An aggregate of approximately \$0.15 million of the Company’s common stock issuable at the closing of the transaction were held back for 12 months following the closing for the satisfaction of certain indemnification claims.

Additionally, in the event that revenue from the assets purchased under the agreement in 2019 is greater than certain specified revenue targets, the Company will be obligated to issue earn-out consideration of up to a maximum of \$3.5 million payable in shares of the Company’s common stock (subject to certain conditions). In the event that such revenue targets are not met in 2019, but 2020 revenue from the assets purchased exceeds certain higher targets for 2020, then the Company will be obligated to issue up to a maximum of \$2.25 million in earnout consideration in the form of stock. The maximum total earnout consideration payable for all periods is \$3.5 million in the aggregate, payable in the Company’s common stock.

On February 6, 2019, the Company entered into the Tenth Amendment to its Loan and Security Agreement with EWB. Under the Tenth Amendment, the Revolving Loan Facility under the Loan and Security Agreement was increased from \$16.0 million to \$20.0 million, the interest rate was reduced from prime rate plus 1.0% to prime rate plus 0.75%, the maturity date was extended to February 8, 2021, and certain financial covenants were amended, including covenants with respect to minimum EBITDA levels.

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

Not applicable.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

As of the end of the fiscal year ended December 31, 2018, as required in Rule 13a-15(b) under the Exchange Act, we carried out an evaluation under the supervision and with the participation of members of our senior management, including our CEO and CFO, of the effectiveness of the design and operation of the Company's disclosure controls and procedures (as defined in Rule 13a-15(e) under the Exchange Act). Disclosure controls and procedures are those controls and other procedures that are designed to provide reasonable assurance that the information required to be disclosed in our SEC reports that we file or submit under the Exchange Act (i) is recorded, processed, summarized and reported within the time periods specified in SEC rules and forms, and (ii) is accumulated and communicated to our management, including our CEO and CFO, as appropriate to allow timely decisions regarding required disclosure.

Based on our evaluation, our management, including our CEO and CFO, concluded that as of December 31, 2018, our disclosure controls and procedures were effective at the reasonable assurance level.

Management's Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as defined in Rule 13a-15(f) under the Exchange Act, to provide reasonable assurance regarding the reliability of our financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles in the United States, or U.S. GAAP. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of consolidated financial statements for external purposes in accordance with U.S. GAAP. 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 consolidated financial statements in accordance with U.S. GAAP, and that receipts and expenditures of the Company are being made only in accordance with authorizations of management and or directors; 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 interim or annual consolidated financial statements.

A control system, no matter how well designed and operated, can only provide reasonable assurance that the objectives of the control system are met. Because there are inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within the Company have been or will be detected.

A deficiency in internal control over financial reporting exists when the design or operation of a control does not allow management or employees, in the normal course of performing their assigned functions, to prevent or detect misstatements on a timely basis. A material weakness is a deficiency, or a combination of deficiencies, in internal control over financial reporting, such that there is a reasonable possibility that a material misstatement of the company's annual or interim financial statements will not be prevented or detected on a timely basis.

Our management, including our CEO and CFO, assessed our internal control over financial reporting as of December 31, 2018. In making the assessment of internal control over financial reporting, our management based its assessment on the criteria issued by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in "Internal Control — Integrated Framework of 2013." Our management's assessment included evaluation of such elements as the design and operating effectiveness of key financial reporting controls, process documentation, accounting

policies, and our overall control environment. This assessment is supported by testing and monitoring performed by our internal accounting and finance organization, but has not been reviewed by our independent registered public accounting firm.

Based on management's assessment, management has concluded that the Company's internal control over financial reporting was effective as of December 31, 2018.

Changes in Internal Controls over Financial Reporting

We have made no changes to our internal control over financial reporting during the three months ended December 31, 2018 that have materially affected, or that are reasonably likely to materially affect, our internal control over financial reporting.

ITEM 9B. OTHER
INFORMATION

Not applicable.

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PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The information required by Item 10 concerning our directors will be set forth under the captions “Business Experience of Directors” and “Policy for Director Recommendations and Nominations” in our Proxy Statement relating to our 2019 Annual Meeting of Stockholders, referred to in this Annual Report on Form 10-K as the “Proxy Statement,” which we expect to file within 120 days of the end of our fiscal year pursuant to General Instruction G(3) of Form 10-K. Such information is incorporated herein by reference. Certain information required by this item concerning executive officers is set forth in Part I of this Report under the caption “Executive Officers of the Registrant” and is incorporated herein by reference. The information required by this item concerning compliance with Section 16(a) of the Exchange Act is incorporated by reference to the section captioned “Section 16(a) Beneficial Ownership Reporting Compliance” that will be set forth in our Proxy Statement. The information required by this item concerning our code of ethics is incorporated by reference to the section captioned “Code of Conduct and Ethics” in our Proxy Statement. To date, there have been no waivers under our Code of Conduct and Ethics. We intend to disclose future amendments to certain provisions of our Code of Conduct and Ethics or waivers of such Code granted to executive officers and directors on our website at <http://www.identiv.com> within four business days following the date of such amendment or waiver. The information required by this item concerning the Audit Committee of our board of directors is incorporated by reference to the section captioned “Committees of the Board of Directors” in our Proxy Statement.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 11 will be contained in our Proxy Statement under the captions “Compensation of Directors” and “Executive Compensation”, which information is incorporated herein by reference.

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

The information required by Item 12 will be set forth under the captions “Security Ownership of Certain Beneficial Owners and Management” and “Equity Compensation Plan Information” in our Proxy Statement, which information is incorporated herein by reference.

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

The information required by Item 13 will be set forth under the captions “Certain Relationships and Related Transactions” and “Director Independence” in our Proxy Statement, which information is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

The information required by Item 14 will be set forth under the captions “Principal Accountant Fees and Services” and “Policy on Audit Committee Pre-Approval of Audit and Permissible Non-Audit Services of Our Independent Registered Public Accountants” in our Proxy Statement, which information is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

(a) The following documents are filed as a part of this report:

1. Financial Statements: Consolidated Financial Statements filed as part of this report are listed under Item 8. Financial Statements and Supplementary Data.
2. Financial Statement Schedules: None.
3. Exhibits: See Item 15(b) below.

3. Exhibits

Exhibit Number	Description of Document
2.1†	<u>Share Purchase Agreement dated March 30, 2010 between SCM Microsystems, Inc. d/b/a/ Identive Group, Dr. George Levy, Mr. Matt McDaniel, GL Investments, LLC, Mr. Hugo Garcia, Mr. Stan Kenney and RockWest Technology Group LLC. (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on March 31, 2010.)</u>
2.2†	<u>Agreement and Plan of Merger dated February 6, 2018 among the Company, Eagle Acquisition, Inc., 3VR Security, Inc., and Fortis Advisors LLC, as Securityholder Representative. (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on February 6, 2018.)</u>
2.3†	<u>Agreement and Plan of Merger, by and among Identiv, Inc., Thursby Software Systems, Inc., TSS Merger Sub, Inc., TSS Acquisition, LLC and William Thursby as the sole Stockholder of Thursby Software Systems, Inc., dated as of October 25, 2018. (Incorporated by reference to Exhibit 2.1 to the Company's Current Report on Form 8-K filed on October 25, 2018.)</u>
3.1	<u>Fourth Amended and Restated Certificate of Incorporation. (Incorporated by reference to Exhibit 3.1 to the Company's Registration Statement on Form S-4/A, filed on November 10, 2009 (SEC File No. 333-162618).)</u>
3.2	<u>Certificate of Amendment to Fourth Amended and Restated Certificate of Incorporation. (Incorporated by reference to Exhibit 3.4 to the Company's Quarterly Report on Form 10-Q for the quarter ended March 31, 2010.)</u>
3.3	<u>Certificate of Amendment to Fourth Amended and Restated Certificate of Incorporation. (Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on June 17, 2010.)</u>
3.4	<u>Certificate of Amendment to Fourth Amended and Restated Certificate of Incorporation. (Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on June 7, 2011.)</u>

- 3.5 Certificate of Amendment to Fourth Amended and Restated Certificate of Incorporation.
(Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on
May 23, 2014.)
- 3.6 Certificate of Amendment to Fourth Amended and Restated Certificate of Incorporation, as
amended. (Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form
8-K filed on May 18, 2016.)
- 3.7 Amended and Restated Bylaws. (Incorporated by reference to Exhibit 3.2 to the Company's
Quarterly Report on Form 10-Q for the quarter ended September 30, 2002.)
- 4.1 Specimen Common Stock Certificate. (Incorporated by reference to Exhibit 4.1 to the Company's
Quarterly Report on Form 10-Q for the quarter ended June 30, 2010.)
- 4.2 Certificate of Designation of Rights, Preferences and Privileges of Series A Participating
Preferred Stock of SCM Microsystems, Inc. (Incorporated by reference to Exhibit 3.3 to the
Company's Registration Statement on Form 8-A filed on November 14, 2002.)

Exhibit Number	Description of Document
4.3	<u>Certificate of Designation of Preferences, Rights and Limitations of Series B Non-Voting Convertible Preferred Stock dated December 21, 2017. (Incorporated by reference to Exhibit 3.1 to the Company's Current Report on Form 8-K filed on December 21, 2017.)</u>
4.4	<u>Warrant issued to East West Bank dated February 8, 2017. (Incorporated by reference to Exhibit 4.1 to the Company's Current Report on Form 8-K filed on February 14, 2017.)</u>
4.5	<u>Warrant issued to Venture Lending & Leasing VII, Inc. dated February 8, 2017. (Incorporated by reference to Exhibit 4.2 to the Company's Current Report on Form 8-K filed on February 14, 2017.)</u>
4.6	<u>Warrant issued to Venture Lending & Leasing VIII, Inc. dated February 8, 2017. (Incorporated by reference to Exhibit 4.3 to the Company's Current Report on Form 8-K filed on February 14, 2017.)</u>
10.1*	<u>Form of Director and Officer Indemnification Agreement. (Incorporated by Reference to Exhibit 10.1 to the Company's Annual Report on Form 10-K for the year ended December 31, 2015).</u>
10.2	<u>Amended and Restated Settlement Agreement dated April 8, 2009 among Hirsch Electronics Corporation, Secure Keyboards, Ltd. and Secure Networks, Ltd. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 4, 2009.)</u>
10.3	<u>Limited Guarantee dated April 8, 2009 by SCM Microsystems, Inc. in favor of Secure Keyboards, Ltd. and Secure Networks, Ltd. (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on April 9, 2009.)</u>
10.4*	<u>2011 Incentive Compensation Plan, as amended through March 6, 2018. (Incorporated by reference to Exhibit 10.3 of the Company's Quarterly Report on Form 10-Q for the quarter ended June 30, 2018.)</u>
10.5*	<u>2011 Employee Stock Purchase Plan. (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on June 7, 2011.)</u>
10.6*	<u>Letter Agreement dated September 14, 2015 between the Company and Steven Humphreys. (Incorporated by reference to Exhibit 10.2 of the Company's Current Report on Form 8-K filed on September 16, 2015.)</u>
10.7*	<u>Offer Letter dated January 19, 2017 between the Company and Sandra Wallach. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 17, 2017.)</u>
10.8	<u>Share Purchase Agreement dated December 10, 2013 between Bluehill ID AG, Identive Services AG and Sandpiper Assets SA regarding the sale and purchase of shares of and loans provided to Multicard AG. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 26, 2013.)</u>
10.9	<u>Share Purchase Agreement dated December 10, 2013 between Bluehill ID AG and Sandpiper Assets SA regarding the sale and purchase of shares of and loans provided to Payment Solution AG. (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on December 26, 2013.)</u>
10.10	<u>Loan and Security Agreement dated February 8, 2017 between the Company and East West Bank. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 14, 2017.)</u>

- 10.11 First Amendment to Loan and Security Agreement dated March 27, 2017 between the Company and East West Bank. (Incorporated by reference to Exhibit 10.11 to the Company's Annual Report on Form 10-K filed on March 28, 2018.)
- 10.12 Second Amendment to Loan and Security Agreement dated December 19, 2017 between the Company and East West Bank. (Incorporated by reference to Exhibit 10.12 to the Company's Annual Report on Form 10-K filed on March 28, 2018.)
- 10.14 Third Amendment to Loan and Security Agreement dated January 31, 2018 between the Company and East West Bank. (Incorporated by reference to Exhibit 10.1 to the Company's Annual Report on Form 8-K filed on February 1, 2018.)
- 10.15 Fourth Amendment to Loan and Security Agreement dated February 5, 2018 between the Company and East West Bank. (Incorporated by reference to Exhibit 10.4 to the Company's Quarterly Report on Form 10-Q filed on May 15, 2018.)

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Exhibit Number	Description of Document
10.16	<u>Fifth Amendment to Loan and Security Agreement dated March 6, 2018 between the Company, 3VR Security, Inc. and East West Bank. (Incorporated by reference to Exhibit 10.5 to the Company's Quarterly Report on Form 10-Q filed on May 15, 2018.)</u>
10.17	<u>Sixth Amendment to Loan and Security Agreement dated April 18, 2018 between the Company, 3VR Security, Inc. and East West Bank. (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on August 13, 2018.)</u>
10.18	<u>Seventh Amendment to Loan and Security Agreement dated July 17, 2018 between the Company, 3VR Security, Inc. and East West Bank. (Incorporated by reference to Exhibit 10.1 to the Company's Quarterly Report on Form 10-Q filed on November 13, 2018.)</u>
10.19	<u>Eighth Amendment to Loan and Security Agreement dated November 1, 2018 between the Company, 3VR Security, Inc. Thursby Software Systems and East West Bank. (Incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on November 13, 2018.)</u>
10.20 [^]	<u>Ninth Amendment to Loan and Security Agreement dated January 2, 2019 between the Company, 3VR Security, Inc. Thursby Software Systems and East West Bank.</u>
10.21	<u>Tenth Amendment to Loan and Security Agreement dated February 6, 2019 between the Company, Thursby Software Systems and East West Bank. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 12, 2019.)</u>
10.22	<u>Loan and Security Agreement dated February 8, 2017 between the Company and Venture Lending & Leasing VII, Inc., and Venture Lending & Leasing VIII, Inc. (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 14, 2017.)</u>
10.23	<u>Supplement to the Loan and Security Agreement dated February 8, 2017 between the Company and Venture Lending & Leasing VII, Inc., and Venture Lending & Leasing VIII, Inc. (Incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on February 14, 2017.)</u>
10.24	<u>Securities Purchase Agreement dated December 21, 2017 among the Company, 21 April Fund, Ltd. and 21 April Fund, LP. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 21, 2017.)</u>
10.25	<u>Stockholder Agreement dated December 21, 2017 among the Company, 21 April Fund, Ltd. and 21 April Fund, LP. (Incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on December 21, 2017.)</u>
10.26	<u>Form of Securityholder Agreement dated as of February 6, 2018 between the Company, each of the shareholders and noteholders of 3VR Security, Inc., the Management Carve-out Participants (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 6, 2018).</u>
10.27	<u>Form of Subordinated Unsecured Promissory Note (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 6, 2018).</u>
10.28 [†]	<u>Asset Purchase Agreement, by and among Identiv, Inc., Viscount Acquisition ULC, Viscount Systems, Inc., Viscount Communications and Control Systems, Freedom Access and Indemnity, LLC, and</u>

VS225LLC, dated as of December 19, 2018. (Incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on December 20, 2018.)

21.1^ Subsidiaries of the Registrant.

23.1^ Consent of Independent Registered Public Accounting Firm.

31.1^ Certification of Chief Executive Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.

31.2^ Certification of Chief Financial Officer pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.

32+ Certification of Chief Executive Officer and Chief Financial Officer 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

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Exhibit Number	Description of 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

§Schedules and attachments have been omitted pursuant to Item 601(b)(2) of Regulation S-K. The registrant undertakes to furnish supplemental copies of any of the omitted schedules and attachments upon request by the Securities and Exchange Commission.

^Filed herewith.

*Denotes management compensatory contract or arrangement.

+Furnished herewith and not “filed” for purposes of Section 18 of the Securities and Exchange Act of 1934, as amended (the “Exchange Act”). Such certifications will not be deemed to be incorporated by reference into any filings under the Securities Act of 1933 or the Exchange Act, except to the extent that the registrant specifically incorporates by reference.

ITEM 16. FORM 10-K SUMMARY

Not applicable.

SIGNATURES

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

Registrant
IDENTIV, INC.

By: /s/ Steven Humphreys
Steven Humphreys
Chief Executive Officer

March 15, 2019

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENT, that each person whose signature appears below constitutes and appoints Steven Humphreys and Sandra Wallach, and each of them, his or her true and lawful attorneys in fact, each 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 each of said attorneys in fact or their substitute or substitutes may do or cause to be done by virtue hereof.

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

Signature	Capacity in Which Signed	Date
/s/ Steven Humphreys Steven Humphreys	Chief Executive Officer (Principal Executive Officer)	March 15, 2019
/s/ Sandra wallach Sandra Wallach	Chief Financial Officer and Secretary (Principal Financial and Accounting Officer)	March 15, 2019
/s/ JAMES E. OUSLEY James E. Ousley	Chairman of the Board and Director	March 15, 2019
/s/ NINA B. SHAPIRO Nina B. Shapiro	Director	March 15, 2019
/s/ Gary Kremen Gary Kremen	Director	March 13, 2019