

PIXELWORKS, INC  
Form 10-K  
March 09, 2016  
UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION  
WASHINGTON, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2015

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: 000-30269

PIXELWORKS, INC.  
(Exact name of registrant as specified in its charter)

Oregon 91-1761992  
(State or other jurisdiction of (I.R.S. Employer  
incorporation or organization) Identification No.)

224 Airport Parkway, Suite 400, San Jose, CA 95110  
(Address of principal executive offices) (Zip Code)

408-200-9200  
(Registrant's telephone number, including area code)

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

Title of each class Name of each exchange on which registered  
Common Stock NASDAQ Global Market

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

None

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

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or 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 Section 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the registrant was required to file such reports), and (2) has been subject to such filing requirements for the past 90 days. Yes  No

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

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

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

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input checked="" type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>

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

The aggregate market value of the registrant's common stock held by non-affiliates at June 30, 2015 was \$116,515,993 based on the closing price of \$5.88 per share of common stock on the NASDAQ Global Market on June 30, 2015 (the last business day of the registrant's most recently completed second fiscal quarter). For purposes of this calculation, executive officers and directors are considered affiliates as well as holders of more than 5% of the registrant's common stock known to the registrant. This determination of affiliate status is not a conclusive determination for other purposes.

Number of shares of common stock of the registrant outstanding as of February 29, 2016: 28,073,767

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Documents Incorporated by Reference

Part III incorporates information by reference to the registrant's definitive proxy statement, to be filed with the Securities and Exchange Commission within 120 days after the close of the fiscal year ended December 31, 2015.

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FOR THE YEAR ENDED DECEMBER 31, 2015  
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SIGNATURES

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## Forward-looking Statements

This Annual Report on Form 10-K, including Management's Discussion and Analysis of Financial Condition and Results of Operation in Part II, Item 7, contains "forward-looking statements" that are based on current expectations, estimates, beliefs, assumptions and projections about our business. Words such as "expects," "anticipates," "intends," "plans," "believes," "seeks," "estimates" and variations of such words and similar expressions are intended to identify such forward-looking statements. These statements are not guarantees of future performance and involve numerous risks, uncertainties and assumptions that are difficult to predict. These forward-looking statements include statements regarding: the features and benefits of our technologies and products; market trends and changes, including in the video consumption, the mobile market, large screen flat panel display and digital projection markets; our strategy, including regarding product and research and development and sales and marketing; the sufficiency of our working capital and need for, or ability to secure, additional financing; the success of our products in expanded markets; customer and distributor concentration; current global economic challenges; our competitive advantages in research and development; levels of inventory at distributors and customers; changes in customer ordering patterns or lead times; seasonality; backlog; competition; intellectual property; insufficient, excess or obsolete inventory and variations in inventory valuation. Factors which may cause actual results to vary materially from those contained in the forward-looking statements include, without limitation: our ability to deliver new products in a timely fashion; our new product yield rates; changes in estimated product costs; product mix; the growth of the markets we serve; supply of products from third-party foundries; failure or difficulty in achieving design wins; timely customer transition to new product designs; competitive factors, such as rival chip architectures, introduction or traction by competing designs, or pricing pressures; litigation related to our intellectual property rights; our limited financial resources; economic and political challenges due to operations in Asia; failure to retain or attract qualified employees; the sufficiency of our intellectual property and patent portfolio; fluctuations in foreign currencies; natural disasters, as well as other risks identified in the risk factors contained in Part I, Item 1A of this Annual Report on Form 10-K. These forward-looking statements speak only as of the date on which they are made, and we do not undertake any obligation to update any forward-looking statement to reflect events or circumstances after the date of this Annual Report on Form 10-K. If we do update or correct one or more forward-looking statements, you should not conclude that we will make additional updates or corrections with respect thereto or with respect to other forward-looking statements. Except where the context otherwise requires, in this Annual Report on Form 10-K, the terms "Pixelworks," the "Company," "we," "us" and "our" mean Pixelworks, Inc., an Oregon corporation, and its wholly-owned subsidiaries.

## PART I

### Item 1. Business.

#### Overview

Pixelworks designs, develops and markets video and pixel processing semiconductors, intellectual property cores, software and custom ASIC solutions for high-end digital video applications. Our products allow manufacturers and developers of digital display and projection devices to manufacture screens of all sizes that display the highest video quality with minimum power consumption. Our core video display processing technology intelligently processes video signals from a variety of sources and optimizes the image for the viewer. The continued advancement of display technology and rapid growth of video consumption on digital delivery systems and mobile applications has increased the demand for video display processing technology in recent years. Our products can be used in a range of devices from large flat panel displays to small low power mobile applications. Our products are designed to reduce overall system power requirements and reduce costs for our customers by minimizing bandwidth, reducing panel costs and optimizing the video display pipeline efficiency. Our primary target markets include digital projection systems, tablets, smartphones, and Ultrabook™ devices.

We have an intellectual property portfolio of 135 patents related to the visual display of digital image data. We focus our research and development efforts on developing video enhancement solutions for our target markets that increase performance, video quality and device functionality while reducing power consumed. We seek to expand our technology portfolio through internal development and co-development with business partners, and we continually evaluate acquisition opportunities and other ways to leverage our technology into other high-value markets.

#### High-Resolution Displays

Display technology has entered the third wave of its evolution. We are seeing the transition from the “digital, flat and thin” era to one focused on increasing and improving resolution. Recent advancements in display manufacturing technology have allowed display manufacturers to pack an increasing number of pixels into tighter spaces. This transition was led by the mobile segment, and in particular by Apple’s “Retina” display, which set the standard for smaller screens. The resolution on display devices in all segments is increasing. This trend of providing more pixels is likely to continue as display manufacturers and device manufacturers seek differentiation, and as content is created at increasingly higher resolutions.

Higher resolution dramatically improves the picture quality of still images, graphics and photos. As pixel densities increase, the ability of the eye to discern individual pixels diminishes. Once the pixels become unperceivable, the image gains a more realistic quality as object outlines and lines appear continuous. More interestingly, scientific studies have shown that the human eye is able to discern a higher pixel density for motion images than static images. However, without the correct video processing, the display’s increased pixel density may not be fully realized for motion images.

Judder is a common problem in video systems. Generally, it occurs when there is a sudden jump or discontinuity in motion from one frame of a motion video sequence to the next. This can be caused by content being created at a frame rate per second that is too low, or the original content frames are being repeated or dropped in order to match either a transmission standard or the playback frame rate of the display.

In addition to judder, high-resolution displays suffer from softness and smearing in motion sequences called motion blur. There are numerous causes of motion blur. The materials used in constructing pixels on the display take a finite amount of time to transition from one state to another. If this time is too long, the image does not update swiftly and motion sequences seem to smear or blur. Additionally, when a motion sequence is played on a digital display device, the new updated frame is drawn over the top of the still visible previous frame. This “hold” effect is perceived by the brain as blur.

Moving images such as movies, television shows and sports also benefit from higher resolution, by providing more realism and depth perception for the viewer. Additionally, higher resolution also accentuates artifacts such as judder and motion blur in moving images. Contrast, color and sharpness artifacts also become more noticeable. As a result, advanced Video Display Processing becomes increasingly necessary at high pixel densities, regardless of screen size. The perceived pixel density of a display increases with viewing distance as objects closer to the eye appear larger than objects further away. Since smartphones are typically viewed at a much closer distance than large screen televisions,

they must have a higher pixel density in order to achieve the same effect. Conversely, a 5-inch smartphone screen viewed from ten inches away appears to be the same size as a 60-inch large screen television viewed from ten feet away.

Artifacts such as judder and motion blur are more noticeable on high-resolution displays, including smaller screens. Pixelworks' advanced Video Display Processing provides original equipment manufacturers ("OEMs") and display manufacturers with solutions to remove these artifacts and to help realize the potential of their investment in high-resolution displays.

Hollywood movies, television shows and other premium content are usually authored at 24 frames per second or 24Hz. At this frame rate, the brain can easily notice the transition from one frame to the next. As the brain and eyes track objects in motion, they have to jump in discrete steps due to the low frame rate. This stop-start motion is perceived by the brain as motion blur, reducing the visible clarity and fidelity of objects in motion.

Today's displays are typically operating at a 50Hz or 60Hz display rate, or a multiple of these such as 100Hz or 120Hz. Converting content created at a different rate, such as 24Hz, to the transmission or display rate can make judder seem worse, as each original frame from the content is repeated an uneven number of times to match the display frame rate. Additionally, for streaming content arriving over the Internet, there may be instances when frames need to be dropped or repeated to maintain synchronization with the associated audio stream, with additional content derived from another source that is being shown on the display at the same time, or with variations in bandwidth over the Internet due to quality of service and available bandwidth constraints.

We believe the most effective method for removing both judder and reducing blur is motion estimation/motion compensation ("MEMC") technology. This technology is based on complex mathematical algorithms that insert additional, interpolated frames to create a new, faster sequence of frames that has smooth, continuous motion. This technique works for virtually all types of panel technology.

#### Video Consumption Trend

With the advent of digital video it has become possible to deliver video to consumers in an ever increasing number of ways. Traditional delivery mechanisms such as over the air broadcasts ("OTA"), cable, satellite, DVDs and Blu-ray are being supplemented with Internet streaming and download services. With these new video delivery options comes the ability to offer more services and improved quality.

According to recent studies by Cisco, video will constitute 80% of all global consumer Internet traffic by 2019. Consumer Video on Demand ("VOD") traffic will double by 2019. HD will be 70 percent of IP VOD traffic in 2019, up from 59 percent in 2014. It would take one person over 5 million years to watch the total amount of video crossing global Internet networks each month in 2019. This rapid increase in video consumption is being driven by a variety of connected digital video devices and applications that allow consumers to easily create, share and consume video. In particular, mobile video consumption is rapidly expanding. Televisions, traditionally thought of as the primary screen, are now giving way to mobile devices. The "always on" and ease of use of mobile devices are helping to make them the preferred choice as the "first screen" for many consumers. Cisco estimates that less than 15% of consumer Internet traffic will be to televisions in 2019, whereas video was 55% of all mobile data traffic in 2015 and is expected to grow to 75% by 2020.

Internet services also offer greater flexibility and the ability to adapt faster to growing trends or new technology. One example of this is the recent transition of premium televisions to Ultra high definition, also known as Ultra-HD. Two standards for Ultra-HD exist today and are commonly referred to as "4K" and "8K". A 4K signal is comprised of 3840 pixels by 2160 lines and has four times more pixels than full high definition or Full-HD, which is 1920 pixels by 1080 lines. While new television sets capable of displaying 4K content have entered the market, widespread availability of 4K content has not been achieved. This is similar to previous technology transitions such as when standard definition, or SD, displays transitioned to Full-HD. During that change, new transmission standards for OTA and cable were developed and the Blu-ray Disc standard was established. Those standards took some time to become widely available, especially in the case of the physical media of Blu-ray. Due to the increased number of pixels, the 4K signal standard requires a new compression and decompression standard called H.265, which offers two times the compression efficiency of the existing H.264 standard which is used to compress Full-HD. Even with the H.265 standard, existing transmission mediums and physical media have difficulty accommodating 4K signals. In some cases, they cannot provide sufficient data rates to ensure the quality of 4K content and require additional technology or modifications. However, the continual improvement in Internet speeds, along with the Internet's flexible architecture makes it easier and faster to launch new services, such as 4K, via the Internet. Additionally, the faster consumer update cycle of mobile devices and PCs versus televisions, Blu-ray players and other consumer video

devices, allows new technology such as H.265 to be deployed faster.

In 2013, Sony launched the world's first 4K Ultra-HD service allowing users to download 4K content and enjoy it in their homes on new 4K-enabled televisions. Netflix, Amazon and other streaming services have also commenced 4K services to consumers.



As more content becomes increasingly available via the Internet, consumers have more choices for how and where they can enjoy content. The increasing amount of content available through the Internet has also led to an increase in the number and type of devices that can be used to access this content. According to DisplaySearch the number of televisions, tablets, smartphones and Ultrabook™ devices being sold is expected to increase beyond 2.3 billion devices by 2018.

#### Mobile Market

As consumers increasingly turn to mobile devices for watching sports, television shows and movies, the need for video quality that matches that of televisions becomes more important. However, today's mobile devices often lack the sophisticated Video Display Processing that has become standard in today's televisions. Consequently, mobile devices suffer from video artifacts that are not present on TVs. With the display being the central feature of the user experience and interface, we believe there is a significant opportunity to offer product differentiation by adding Video Display Processing technology.

There has been continued growth in the share of online video viewed by mobile devices. The Q4 2014 Global Video Index report from Ooyala showed that 34% of all video plays in Q4 2014 were on tablets and smartphones. The share of online video viewing of smartphones and tablets combined grew two times in 2014, five times since 2012 and sixteen times since 2011. The report also lists "optimizing video playback quality to increase mobile viewer engagement" as one of the key points to monetizing mobile video.

Mobile display systems pose a number of unique challenges. Power is of primary importance, impacting form factor, cost and performance. As these systems have added more functionality, new features have had to compete for battery life, internal bandwidth and space. While the overall computational power of these systems has never been greater, the addition of more features has created significant burdens on systems' ability to process larger amounts of data. The addition of high-resolution displays has further increased the burden on these resources.

Using the same technology developed for large screen televisions is neither feasible nor desirable. The Video Display Processing pipelines used in televisions consume many watts of power and would be unsuitable for battery powered systems. In televisions, the size constraints on electronics are significantly less stringent when compared to mobile systems, making it physically impossible to fit an existing television solution into a mobile device. To furnish the mobile market with appropriate solutions, Pixelworks has taken a holistic, system-wide view and re-invented its Video Display Processing technology to fit within the mobile constraints of battery life, bandwidth, form factor and performance. This approach has enabled us to create technology that meets the power and size requirements of mobile as well as offering additional benefits such as reducing the bandwidth burden of high-resolution video and freeing up more bandwidth for the CPU and GPU.

The mobile market today is comprised of three main categories; smartphones, tablets and Ultrabook™ devices.

#### Smartphones:

Smartphones have become a popular choice for many consumers. CCS Insight estimates that almost 2 billion smartphones will be sold in 2019, accounting for 72% of all mobile phones sold in 2019.

The resolution of smartphone displays have been increasing and this trend is expected to continue. Full-HD has been offered by higher-end models and is becoming increasingly popular. The market is now in the process of moving to Quad-HD (2560 pixels by 1440 lines). It is expected that resolutions will continue to increase. For example, Sony has already released a smartphone featuring a 4K display.

The compact form factor of smartphones requires overcoming design limitations of power and space. Technologies that can reduce power and extend battery life are attractive as they offer more utility to the end user as well as help to reduce the size of the battery and consequently the overall size of the unit.

Given the competitive nature of the smartphone market, we believe the ability to differentiate devices by incorporating features consumers find valuable is also critical. With the display being the salient component of the smartphone and the rapidly increasing use of these devices for video consumption, we believe that the incorporation of Video Display Processing is the next logical step.

#### Tablets:

The line between tablets and smartphones is becoming increasingly indistinct as more tablets are offering mobile connectivity and are now available in sizes similar to those of smartphones. Tablets offer broad appeal to consumers. IDC expects an estimated 234.5 million units to ship in 2015 with over 260 million units in 2019. This growth is

expected to come at the expense of other mobile PC devices, most notably notebooks.

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Tablet screen resolutions are also expected to increase from the XGA (1024 pixels by 768 lines) offering of the original iPad. Today, many Full-HD tablets are available in sizes 7.0 inches and greater. There is a continuous trend to increase this resolution. For example, in 2013, Panasonic launched a 20-inch 4K tablet aimed at professional users and delivers workstation performance and incorporates Intel Core i5 processors running Windows 8.1. Samsung is also selling its 12.2 inch Galaxy Tab Pro tablet targeted at consumers, which incorporates a resolution of 2560 pixels by 1600 lines display.

While many of the tablets' electronics may be similar to those of smartphones, the larger display consumes more power. Consequently, manufacturers are continually striving to reduce power consumption to improve battery life and reduce the cost and physical bulk of the tablet.

The tablets' larger screen size makes them ideal for consuming video content. The Q4 2014 Global Video Index report from Ooyala highlighted that tablet users watched long-form video for 70% of the time they spent viewing on their device. Tablets also lead in the percentage of time spent watching content from 30-60 minutes long.

Ultrabook™ devices:

Ultrabook™ refers to a thin and light laptop that meets the Intel specification of the same name, and is a trademark of Intel Corporation in the U.S. and/or other countries. Ultrabook™ devices are designed for mobility without compromising performance and battery life. They compete with tablets but typically have more computational power, dedicated keyboards and greater connectivity options.

Display resolutions for Ultrabook™ devices have been increasing. Current offerings include high-resolution displays up to 3200 pixels by 1800 lines.

Battery life is a significant concern for Ultrabook™ devices due to the higher power consumption of the display and the main processor and graphics subsystem. As with smartphones and tablets, we believe there is a need for a solution to reduce power consumption, extend battery life and reduce bulk.

As with tablets, Ultrabook™ devices provide a convenient and popular platform to view streaming video and downloaded content.

Digital Projection Market

Increasingly affordable price points are driving continued adoption of digital projectors in business and education, as well as among consumers. Technology improvements are helping to reduce the size and weight of projection devices while increasing their performance. Projector models range from larger units designed to be permanently installed in a conference hall or other venue, to ultra-portable devices weighing fewer than two pounds for maximum portability.

According to PMA Research Limited (formerly Pacific Media Associates), the worldwide front projector market shipped 8.7 million units in 2015 and is forecasted to reach 10.2 million units by 2019.

The feature set of projection systems differs from that of a typical large-screen flat panel display such as a television. This is primarily because the projector is a sharing and collaboration device while the television is designed for direct consumption of content.

The front projection market services several different areas such as business, education and home theater. Business users employ multimedia projectors to display both still and video presentation materials from PCs and other sources. Requirements for the business market include portability, compatibility with multiple software and hardware applications and features that ensure simple operation. In education environments ranging from elementary schools to university campuses, projectors help teachers integrate media-rich instruction into classrooms. Home theater projector systems can drive large-screen displays for content consumption where flat panel displays are either economically not viable or physically incompatible for use.

Consistent with the trends of other consumer products, digital projectors are increasingly incorporating networking capabilities that enable the sharing of video and other content among multiple devices. This, in turn, is enabling new use models for digital projection in both the education and business environments. For example, one teacher can present the same material simultaneously in multiple classrooms, and students in different classrooms can display and discuss their work. Such connectivity allows instant access to content and sharing of content, which promotes interaction and collaboration among dispersed groups. In the business setting, this connectivity enables teleconferencing and the seamless sharing of content for more effective meetings.



### Core Technologies and Products

We have developed a portfolio of advanced video algorithms and IP to address a broad range of challenges in digital video. We believe our technologies can significantly improve video quality and will become increasingly important as the popularity of video content consumption grows, and pixel densities, screen size and image quality increase. Our products are designed with a flexible architecture that allows us to combine algorithms and functional blocks of digital and mixed signal circuitry. Accordingly, our technologies can be implemented across multiple products, in combinations within single products and can be applied to a broad range of applications including smartphones, tablets, Ultrabook™ devices, televisions, monitors and projectors. The majority of our products include one or more technologies to provide optimal high-quality Video Display Processing solutions to our customers, regardless of screen size.

Our core Video Display Processing technologies include:

**Halo Free MEMC.** Our proprietary Halo Free MEMC technology significantly improves the performance and viewing experience of any screen by addressing problems such as judder and motion blur. Unlike competitive solutions it also reduces halo effects that are a byproduct of MEMC. Halos are objectionable blurred regions that surround moving objects as the MEMC algorithms try to reconstruct missing image data caused by the concealing and revealing of objects as they pass over or behind one another. Removing halos dramatically improves image quality and is of particular importance on high-resolution displays where artifacts become more visible.

**Advanced Scaling.** As display resolutions continue to increase, there is a need to convert lower resolution content to higher resolution in order to display content properly. With the latest wave of high-resolution displays, the quality and quantity demands of scaling have increased significantly. Artifacts become more noticeable on these types of displays as they distract from the realism effect. In addition, with the availability of high resolution content lagging behind the availability of high resolution displays, high-quality scaling is required to ensure high resolution displays do not suffer when compared to Full-HD displays of the same size. Our advanced scaling is designed to ensure that up-conversion of lower resolution content is of the highest quality in maintaining the fidelity of image.

**Mobile Video Display Processing.** We have developed innovative Video Display Processing solutions, that are designed to optimize power consumption for mobile devices. Beyond MEMC and Advanced Scaling, these mobile solutions provide the kind of improvements in color, contrast, sharpness and de-blur that are currently only found in high quality televisions today. Furthermore, this technology can reduce system power consumption and extend battery life.

**VueMagic and Networked Displays.** With the advent of mobile devices being used in business, education and consumer environments, we believe there is a growing need to connect to displays wirelessly for sharing and collaboration. VueMagic uses our networking technology to enable the same video stream to be networked across multiple displays for applications such as connected video projection and digital signage. VueMagic provides interactive features for annotation and display control, and unlike other solutions, is device and operating system independent.

Our product development strategy is to leverage our expertise in Video Display Processing to address the evolving needs of the advanced flat panel display, digital projection and other markets that require superior image quality. We plan to continue to focus our development resources to maintain position in the market and provide leading edge solutions for the advanced digital projection markets and to enhance our video processing solutions for advanced flat panel displays and other emerging markets. Additionally, we plan to leverage our research and development investment into products that address high-value markets, such as mobile, where our innovative proprietary technology provides differentiation and system power saving benefits. We deliver our technology in a variety of offerings, which take the form of single-purpose chips, highly integrated SoCs that incorporate specialized software, full solutions incorporating software and other tools and IP cores that allow our technology to be incorporated into third party solutions.

Our primary video display processor product categories include the following:

- **ImageProcessor ICs.** Our ImageProcessor ICs include embedded microprocessors, digital signal processing technology and software that control the operations and signal processing within high-end display systems such as projectors and high-resolution flat panels. ImageProcessor ICs were our first product offerings and continue to comprise the majority of our business. We have continued to refine the architectures for optimal

performance, manufacturing our products on process technologies that align with our customers' requirements. Additionally, we provide a software development environment and operating system that enables our customers to more quickly develop and customize the "look and feel" of their products.

**Video Co-Processor ICs.** Products in this category work with an image processor to post-process video signals to enhance the performance or feature set of the overall video solution (for example, by significantly reducing judder and motion blur). Our Video Co-Processor ICs can be used with our ImageProcessor ICs or with image processing solutions from other manufacturers, and in most cases can be incorporated by a display manufacturer without assistance from the supplier of the base image processor. This flexibility enables manufacturers to augment their existing or new designs to enhance their video display products.

**Networked Display ICs.** Our Networked Display ICs allow the same video stream to be networked across multiple displays, for example to connect projectors in different classrooms or to enable networked streaming of video in digital signage applications. Our Networked Display IC combines video sharing capabilities with video image processing, wireless connectivity and Internet connection to ensure high quality, multi-source video output and enhanced value to our projection display customers.

#### Customers, Sales and Marketing

The key focus of our global sales and marketing strategy is to achieve design wins with industry leading branded manufacturers in our target markets and to continue building strong customer relationships. Once a design win has been achieved, sales and marketing efforts are focused on building long-term mutually beneficial business relationships with our customers by providing superior technology and reducing their costs, which complements our customers' product development objectives and meets their expectations for price-performance and time to market. Marketing efforts are focused on building market-leading brand awareness and preference for our solutions.

We utilize direct sales and marketing resources in China, Japan, Korea, Taiwan, and the U.S. as well as indirect resources in several regions. In addition to sales and marketing representatives, we have field application engineers who provide technical expertise and assistance to manufacturing customers on final product development.

Our global distribution channel is multi-tiered and involves both direct and indirect distribution channels, as described below:

**Distributors.** Distributors are resellers in local markets who provide engineering support and stock our semiconductors in direct relation to specific manufacturing customer orders. Our distributors often have valuable and established relationships with our end customers, and in certain countries it is customary to sell to distributors. While distributor payment to us is not dependent upon the distributor's ability to resell the product or to collect from the end customer, our distributors may provide longer payment terms to end customers than those we would offer. Sales to distributors accounted for 48%, 63% and 65% of revenue in 2015, 2014 and 2013, respectively.

Our largest distributor, Tokyo Electron Device Ltd. ("TED"), is located in Japan. TED represented more than 10% of revenue in each of 2015, 2014 and 2013, and accounted for more than 10% of accounts receivable as of December 31, 2015 and 2014. Bright Creation Technologies, Ltd. ("BCT"), is a distributor located in Hong Kong. BCT represented more than 10% of revenue in 2013. No other distributor accounted for more than 10% of revenue in 2015, 2014 or 2013.

We also have distributor relationships in China, Europe, Korea, Southeast Asia, Taiwan and the U.S.

**Direct Relationships.** We have established direct relationships with companies that manufacture high-end display systems. Some of our direct relationships are supported by commission-based manufacturers' representatives, who are independent sales agents that represent us in local markets and provide engineering support but do not carry inventory. Revenue through direct relationships accounted for 52%, 37% and 35% of total revenue in 2015, 2014 and 2013, respectively.

We have direct relationships with companies falling into the following three classifications:

**Integrators.** Integrators are original equipment manufacturers who build display devices based on specifications provided by branded suppliers.

**Branded Manufacturers.** Branded manufacturers are globally recognized manufacturers who develop display device specifications, and manufacture, market and distribute display devices either directly or through resellers to end-users.

**Branded Suppliers.** Branded suppliers are globally recognized suppliers who develop display device specifications and then source them from integrators, typically in Asia, and distribute them either directly or through resellers to end-users.





Revenue attributable to our top five end customers together represented 83%, 60% and 57% of revenue in 2015, 2014 and 2013, respectively. End customers include customers who purchase directly from us as well as customers who purchase products indirectly through distributors. Sales to Hitachi Ltd. represented more than 10% of revenue in each of 2015, 2014 and 2013. Sales to Seiko Epson Corporation represented more than 10% of revenue in 2015 and 2014, and accounted for more than 10% of accounts receivable as of December 31, 2015 and 2014. Sales to NEC Corporation represented more than 10% of revenue in each of 2014 and 2013. Sales to Apple Inc. represented more than 10% of revenue in 2013. No other end customer accounted for more than 10% of revenue in 2015, 2014 or 2013.

#### Seasonality

Our business is subject to seasonality related to the markets we serve and the location of our customers. We have historically experienced higher revenue from the digital projector market in the third quarter of the year, and lower revenue in the first quarter of the year, as our Japanese customers reduce inventories in anticipation of their March 31 fiscal year end.

#### Geographic Distribution of Sales

Sales outside the U.S. accounted for approximately 100%, 94% and 83% of revenue in 2015, 2014 and 2013, respectively.

Financial information regarding our domestic and foreign operations is presented in "Note 9: Segment Information" in Part II, Item 8 of this Annual Report on Form 10-K.

#### Backlog

Our sales are made pursuant to customer purchase orders for delivery of standard products. The volume of product actually purchased by our customers, as well as shipment schedules, are subject to frequent revisions that reflect changes in both the customers' needs and product availability. Our entire order backlog is cancelable, with a portion subject to cancellation fees. In light of industry practice and our own experience, we do not believe that backlog as of any particular date is indicative of future results.

#### Competition

In general, the semiconductor industry is intensely competitive. The markets for higher performance display and projection devices, including the markets for large-screen flat panel displays, mobile devices, digital projectors and other applications demanding high quality video, are characterized by rapid technological change, evolving industry standards, compressed product life cycles and declining average selling prices. We believe the principal competitive factors in our markets are product performance, time to market, cost, functional versatility provided by software, customer relationships and reputation, patented innovative designs, levels of product integration, compliance with industry standards and system design cost. We believe we compete favorably with respect to these factors.

Our current products face competition from specialized display controller developers and in-house display controller ICs designed by our customers and potential customers. Additionally, new alternative display processing technologies and industry standards may emerge that compete with technologies we offer.

We also compete with specialized and diversified electronics and semiconductor companies that offer display processors or scaling components. Some of these include Actions Microelectronics Co., Ltd., i-Chips Technologies Inc., Intersil Corporation, Lattice Semiconductor Corporation, MediaTek Inc., Novatech Co., Ltd. Inc., NVIDIA Corporation, QUALCOMM Incorporated, Realtek Semiconductor Corp., Renesas Electronics America, Sigma Designs, Inc., Solomon Systech (International) Ltd., STMicroelectronics N.V., Sunplus Technology Co., Ltd., Texas Instruments Incorporated, and other companies. Potential and current competitors may include diversified semiconductor manufacturers and the semiconductor divisions or affiliates of some of our customers, including LG Electronics, Inc., Matsushita Electric Industrial Co., Ltd., Mitsubishi Digital Electronics America, Inc., NEC Corporation, Samsung Electronics Co., Ltd., ON Semiconductor Corporation, Seiko Epson Corporation, Sharp Electronics Corporation, Sony Corporation, and Toshiba America, Inc. In addition, start-up companies may seek to compete in our markets.

#### Research and Development

Our research and development efforts are focused on the development of our solutions for the mobile device and digital projector markets. Our development efforts are focused on pursuing higher levels of video performance, integration and new features in order to provide our customers with solutions that enable them to introduce market leading products and help lower final systems costs.



We have invested, and expect to continue to invest, significant resources in research and development activities. Our research and development expense was \$24.6 million, \$25.3 million and \$20.7 million in 2015, 2014 and 2013, respectively. During 2013, we received reimbursements related to a co-development arrangement with a customer for costs incurred in connection with our development of an IC product. As a result of the reimbursement, our overall research and development expense was reduced by \$3.5 million in 2013. There were no reductions to research and development expense related to co-development arrangements in 2015 or 2014.

#### Manufacturing

Within the semiconductor industry we are known as a "fabless" company, meaning that we do not manufacture the semiconductors that we design and develop, but instead contract with a limited number of foundries and assembly and test vendors to produce all of our wafers and for completion of finished products. The fabless approach allows us to concentrate our resources on product design and development where we believe we have greater competitive advantages.

See "Risk Factors" in Part I, Item 1A of this Annual Report on Form 10-K for information on risks related to our manufacturing strategy and processes.

#### Intellectual Property

We rely on a combination of nondisclosure agreements and patent, copyright, trademark and trade secret laws to protect the algorithms, design and architecture of our technology. As of December 31, 2015, we held 135 patents and have 33 patent applications pending, compared to 130 patents and 34 patent applications pending as of December 31, 2014. These patents relate generally to improvements in the visual display of digital image data including, but not limited to, improvements in image scaling, image correction, automatic image optimization and video signal processing for digital displays. Our U.S. and foreign patents are generally enforceable for 20 years from the date they were filed. Accordingly, our issued patents have from approximately 2 to 17 years remaining in their respective term, depending on their filing dates. We believe that the remaining term of our patents is adequate relative to the expected lives of our related products.

We intend to seek patent protection for other significant technologies that we have already developed and expect to seek patent protection for future products and technologies as necessary. Patents may not be issued as a result of any pending applications and any claims allowed under issued patents may be insufficiently broad to protect our technology. Existing or future patents may be invalidated, diluted, circumvented, challenged or licensed to others. Furthermore, the laws of certain foreign countries in which our products are or may be developed, manufactured or sold, including various countries in Asia, may not protect our products or intellectual property rights to the same extent as do the laws of the U.S. and, thus, make the possibility of piracy of our technology and products more likely in these countries.

The semiconductor industry is characterized by vigorous protection of intellectual property rights, which have resulted in significant and often protracted and expensive litigation. We, our customers or our foundries from time to time may be notified of claims that we may be infringing patents or other intellectual property rights owned by third parties. Litigation by or against us relating to patent infringement or other intellectual property matters could result in significant expense to us and divert the efforts of our technical and management personnel, whether or not such litigation results in a determination favorable to us. In the event of an adverse result in any such litigation, we could be required to pay substantial damages, cease the manufacture, use and sale of infringing products, expend significant resources to develop non-infringing technology, discontinue the use of certain processes or obtain licenses to the infringing technology. We may not be able to settle any alleged patent infringement claim through a cross-licensing arrangement. In the event any third party made a valid claim against us, our customers or our foundries, and a license was not made available to us on terms that are acceptable to us or at all, we would be adversely affected.

See "Risk Factors" in Part I, Item 1A, and "Note 6: Commitments and Contingencies" in Part II, Item 8 of this Annual Report on Form 10-K for information on various risks related to intellectual property.

#### Environmental Matters

Environmental laws and regulations are complex, change frequently and have tended to become more stringent over time. We have incurred, and may continue to incur, significant expenditures to comply with these laws and regulations and we may incur additional capital expenditures and asset impairments to ensure that our products and our vendors' products are in compliance with these regulations. We would be subject to significant penalties for failure to comply

with these laws and regulations.

See "Risk Factors" in Part I, Item 1A of this Annual Report on Form 10-K for information on various environmental risks.

#### Employees

As of December 31, 2015, we had a total of 215 employees compared to 220 employees as of December 31, 2014.

#### Corporate Information

Pixelworks was founded in 1997 and is incorporated under the laws of the state of Oregon. Our stock is traded on the NASDAQ Global Market under the symbol "PXLW".

#### Availability of Securities and Exchange Commission Filings

We make available through our website our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports and any filings filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act of 1934, free of charge as soon as reasonably practicable after we electronically file or furnish such material with the Securities and Exchange Commission ("SEC"). Our Internet address is [www.pixelworks.com](http://www.pixelworks.com). The content on, or that can be accessed through our website is not incorporated by reference into this filing. Our committee charters and code of ethics are also available free of charge on our website.

The SEC maintains an Internet site at <http://www.sec.gov> that contains our Annual Report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports, if any, or other filings filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act, proxy and information statements. All reports that we file with the SEC may be read and copied at the SEC's Public Reference Room at 100 F Street, NE, Room 1580, Washington, DC, 20549. Information about the operation of the Public Reference Room can be obtained by calling the SEC at 1-800-SEC-0330.

Item 1A. Risk Factors.

Investing in our shares of common stock involves a high degree of risk, and investors should carefully consider the risks described below before making an investment decision. If any of the following risks occur, the market price of our shares of common stock could decline and investors could lose all or part of their investment. Additional risks that we currently believe are immaterial may also impair our business operations. In assessing these risks, investors should also refer to the other information contained or incorporated by reference in this Annual Report on Form 10-K for the year ended December 31, 2015, including our consolidated financial statements and related notes, and our other filings made from time to time with the Securities and Exchange Commission ("SEC").

Company Specific Risks

Our product strategy, which is targeted at markets demanding superior video and image quality, may not address the demands of our target customers and may not lead to increased revenue in a timely manner or at all, which could materially adversely affect our results of operations and limit our ability to grow.

We have adopted a product strategy that focuses on our core competencies in video display processing and delivering high levels of video and image quality. With this strategy, we continue to make further investments in the development of our image processor architecture for the digital projector market, with particular focus on adding increased performance and functionality. For the mobile device market, our strategy focuses on implementing our intellectual property ("IP") to improve the video performance of our customers' image processors through the use of our MotionEngine® advanced video co-processor integrated circuits. This strategy is designed to address the needs of the high-resolution and high-quality segment of these markets. Such markets may not develop or may take longer to develop than we expect. We cannot assure you that the products we are developing will adequately address the demands of our target customers, or that we will be able to produce our new products at costs that enable us to price these products competitively.

Achieving design wins involves lengthy competitive selection processes that require us to incur significant expenditures prior to generating any revenue or without any guarantee of any revenue related to this business. If we fail to generate revenue after incurring substantial expenses to develop our products, our business and operating results would suffer.

We must achieve "design wins," that enable us to sell our semiconductor solutions for use in our customers' products. These competitive selection processes typically are lengthy and can require us to incur significant research and development expenditures and dedicate scarce engineering resources in pursuit of a single customer opportunity. We may not achieve a design win and may never generate any revenue despite incurring significant research and development expenditures. This could cause us to lose revenue and require us to write off obsolete inventory, and could weaken our position in future competitive selection processes.

Even if our product strategy is properly targeted, we cannot assure you that the products we are developing will lead to an increase in revenue from new design wins. To achieve design wins, we must design and deliver cost-effective, innovative and integrated semiconductors that overcome the significant costs associated with qualifying a new supplier and which make developers reluctant to change component sources. Additionally, potential developers may be unwilling to select our products due to concerns over our financial strength. Further, design wins do not necessarily result in developers ordering large volumes of our products. Developers can choose at any time to discontinue using our products in their designs or product development efforts. A design win is not a binding commitment by a developer to purchase our products, but rather a decision by a developer to use our products in its design process. Even if our products are chosen to be incorporated into a developer's products, we may still not realize significant revenue from the developer if its products are not commercially successful or it chooses to qualify, or incorporate the products, of a second source. Additionally, even if our product strategy is successful at achieving design wins and increasing our revenue, we may continue to incur operating losses due to the significant research and development costs that are required to develop competitive products for the digital projection market and mobile market.

If we fail to retain or attract the specialized technical and management personnel required to successfully operate our business, it could harm our business and may result in lost sales and diversion of management resources.

Our success depends on the continued services of our executive officers and other key management, engineering, and sales and marketing personnel and on our ability to continue to attract, retain and motivate qualified personnel.

Competition for skilled engineers and management personnel is intense within our industry, and we may not be successful in hiring and retaining qualified individuals. For example, we have experienced, and may continue to experience, difficulty and increased compensation expense in order to hire and retain qualified engineering personnel in our Shanghai design center. The loss of, or inability to hire, key personnel could limit our ability to develop new products and adapt existing products to our customers' requirements, and may result in lost sales and a diversion of management resources. In addition, Stephen Domenik, a member of our board of directors, was recently appointed to serve as our Interim Chief Executive Officer, succeeding Bruce Walicek, our former Chief Executive Officer. Any transition in our senior management team may involve a diversion of resources and management attention, be disruptive to our daily operations or impact public or market perception, any of which could have a negative impact on our business or stock price.

We have significantly fewer financial resources than most of our competitors which limits our ability to implement new products or enhancements to our current products and may require us to implement future restructuring plans, which in turn could adversely affect our future sales and financial condition.

Financial resource constraints could limit our ability to execute our product strategy or require us to implement restructuring plans, particularly if we are unable to generate sufficient cash from operations or obtain additional sources of financing. Any future restructuring actions may slow our development of new or enhanced products by limiting our research and development and engineering activities. Our cash balances are also lower than those of our competitors, which may limit our ability to develop competitive new products on a timely basis or at all. If we are unable to successfully introduce new or enhanced products, our sales, operating results and financial condition will be adversely affected.

If we are not profitable in the future, we may be unable to continue our operations.

Although we recorded net income for the year ended December 31, 2010, we have otherwise incurred operating losses each year since 2004. If and when we achieve profitability depends upon a number of factors, including our ability to develop and market innovative products, accurately estimate inventory needs, contract effectively for manufacturing capacity and maintain sufficient funds to finance our activities. We cannot assure our investors that we will ever achieve profitability. If we are not profitable in the future, we may be unable to continue our operations.

A significant amount of our revenue comes from a limited number of customers and distributors and from time to time we may enter into exclusive deals with customers, exposing us to increased credit risk and subjecting our cash flow to the risk that any of our customers or distributors could decrease or cancel its orders.

The display manufacturing market is highly concentrated and we are, and will continue to be, dependent on a limited number of customers and distributors for a substantial portion of our revenue. Sales to our top distributor represented 31%, 29% and 31% of revenue for the years ended December 31, 2015, 2014, and 2013, respectively. If any of these distributors ceases to do business with us, it may be difficult for us to find adequate replacements, and even if we do, it may take some time. The loss of any of our top distributors could negatively affect our results of operations.

Additionally, revenue attributable to our top five end customers represented 83%, 60% and 57% of revenue for the years ended December 31, 2015, 2014, and 2013, respectively. As of December 31, 2015, we had two accounts that each represented 10% or more of accounts receivable. As of December 31, 2014 we had three accounts that each represented 10% or more of accounts receivable. All of the orders included in our backlog are cancelable. A reduction, delay or cancellation of orders from one or more of our significant customers, or a decision by one or more of our significant customers to select products manufactured by a competitor or to use its own internally-developed semiconductors, would significantly and negatively impact our revenue. Further, the concentration of our accounts receivable with a limited number of customers increases our credit risk. The failure of these customers to pay their balances, or any customer to pay future outstanding balances, would result in an operating expense and reduce our cash flows.

We do not have long-term purchase commitments from our customers and if our customers cancel or change their purchase commitments, our revenue and operating results could suffer.

Substantially all of our sales to date have been made on a purchase order basis. We do not have any long-term commitments with any of our customers. As a result, our customers may cancel, change or delay product purchase commitments with little or no notice to us and without penalty. This, in turn, could cause our revenue to decline and materially and adversely affect our results of operations.



We may not be able to borrow funds under our credit facility or secure future financing which could affect our ability to fund fluctuations in our working capital requirements.

In December 2010, we entered into a Loan and Security Agreement with Silicon Valley Bank (the "Loan and Security Agreement") to provide a secured, working capital-based, revolving line of credit. In December 2012, we entered into Amendment No. 1 to the Loan and Security Agreement (the "Amendment No. 1"). Among other things, Amendment No. 1 revises the calculation of the borrowing base under the Loan and Security Agreement to \$1.0 million plus 80% of eligible domestic accounts receivable. Amendment No. 1 also provides an option for LIBOR advances that bear interest based on the LIBOR rate. On December 4, 2013, we entered into Amendment No. 2 (the "Amendment No. 2") to the Loan and Security Agreement. Amendment No. 2 changes the maturity date of the revolving line of credit provided pursuant to the Loan and Security Agreement to January 1, 2016. The maturity date was previously December 14, 2014, as provided by Amendment No. 1 to the Loan and Security Agreement. On December 18, 2015, we entered into Amendment No. 3 (the "Amendment No. 3") to the Loan and Security Agreement. Amendment No. 3 changes the maturity date of the revolving line of credit provided pursuant to the Loan and Security Agreement to December 30, 2016. We view this line of credit as a source of available liquidity to fund fluctuations in our working capital requirements. For example, if we experience an increase in order activity from our customers, our cash balance may decrease due to the need to purchase inventories to fulfill those orders. If this occurs, we may need to draw on this facility in order to maintain our liquidity.

This facility contains various conditions, covenants and representations with which we must be in compliance in order to borrow funds. We cannot assure you that we will be in compliance with these conditions, covenants and representations in the future when we may need to borrow funds under this facility, in which case we may need to seek alternative sources of funding, which may not be available quickly or which may be available only on less favorable terms. Our inability to raise the necessary funding in the event we need it could negatively affect our business. In addition, the amount available to us under this facility depends in part on our accounts receivable balance which could decrease due to a decrease in revenue.

This facility expires on December 30, 2016, after which time we may need to secure new financing to continue funding fluctuations in our working capital requirements. We cannot assure you that we will be able to secure new financing in a timely manner or at all, or secure financing on terms that are acceptable to us.

If we are unable to generate sufficient cash from operations and are forced to seek additional financing alternatives, our shareholders may experience dilution or our operations may be impaired.

If we are unable to generate sufficient cash from operations, we may be unable to generate or sustain positive cash flow from operating activities. We would then be required to use existing cash and cash equivalents to support our working capital and other cash requirements. Additionally, from time to time, we may evaluate acquisitions of businesses, products or technologies that complement our business. Any such transactions, if consummated, may consume a material portion of our working capital or require the issuance of equity securities that may result in dilution to existing shareholders. If additional funds are required to support our working capital requirements, acquisitions or other purposes, we may seek to raise funds through debt and equity financing or from other sources. If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our shareholders could be significantly diluted, and these newly-issued securities may have rights, preferences or privileges senior to those of existing shareholders. If we raise additional funds by obtaining loans from third parties, the terms of those financing arrangements may include negative covenants or other restrictions on our business that could impair our operating flexibility, and would also require us to incur interest expense. We can provide no assurance that additional financing will be available at all or, if available, that we would be able to obtain additional financing on terms favorable to us.

We license our intellectual property, which exposes us to risks of infringement or misappropriation, and may cause fluctuations in our operating results.

We have licensed certain of our intellectual properties to third parties and may seek to enter into additional license arrangements in the future. We cannot assure you, however, that others will be interested in licensing our intellectual property on commercially favorable terms or at all. We also cannot ensure that licensees will honor agreed-upon market restrictions, not infringe upon or misappropriate our intellectual property or maintain the confidentiality of our proprietary information.



IP license agreements are complex and earning and recognizing revenue under these agreements depends upon many factors, including completion of milestones, allocation of values to delivered items and customer acceptances. Many of these factors require significant judgments. Also, generating revenue from these arrangements is a lengthy and complex process that may last beyond the period in which efforts begin and, once an agreement is in place, the timing of revenue recognition may depend on events such as customer acceptance of deliverables, achievement of milestones, our ability to track and report progress on contracts, customer commercialization of the licensed technology and other factors, any or all of which may or may not be achieved. The accounting rules associated with recognizing revenue from these transactions are complex and subject to interpretation. Due to these factors, the amount of licensing revenue recognized in any period, if any, and our results of operations, may differ significantly from our expectations. Finally, because licensing revenue typically has a higher margin compared to product sales, licensing revenue can have a disproportionate impact on our gross profit and results of operations. There is no assurance that we will be able to maintain a consistent level of licensing revenue or mix of licensing revenue and revenue from product sales, which could result in wide fluctuations in our results of operations from period to period, making it difficult to accurately measure the performance of our business.

Our revenue and operating results can fluctuate from period to period, which could cause our share price to decline. Our revenue and operating results have fluctuated in the past and may fluctuate from period to period in the future due to a variety of factors, many of which are beyond our control. Factors that may contribute to these fluctuations include those described in this "Risk Factors" section of this report, such as the timing, changes in or cancellation of orders by customers, market acceptance of our products and our customers' products and the timing and extent of product development costs. Additionally, our business is subject to seasonality related to the markets we serve and the location of our customers. For example, we have historically experienced higher revenue from the digital projector market in the third quarter of the year, and lower revenue in the first quarter of the year. As a result of these and other factors, the results of any prior quarterly or annual periods should not be relied upon as indications of our future revenue or operating performance. Fluctuations in our revenue and operating results could cause our share price to decline.

Our net operating loss carryforwards may be limited or they may expire before utilization.

As of December 31, 2015, we had federal and state net operating loss carryforwards of approximately \$214.4 million and \$16.9 million, respectively, which expire between 2016 and 2035. These net operating loss carryforwards may be used to offset future taxable income and thereby reduce our income taxes otherwise payable. However, we cannot assure you that we will have taxable income in the future before all or a portion of these net operating loss carryforwards expire. Additionally, our federal net operating losses may be limited by Section 382 of the Internal Revenue Code of 1986, as amended (the "Code"), which imposes an annual limit on the ability of a corporation that undergoes an "ownership change" to use its net operating loss carryforwards to reduce its tax liability. An ownership change is generally defined as a greater than 50% increase in equity ownership by 5% shareholders in any three-year period. In the event of certain changes in our shareholder base, we may at some time in the future experience an "ownership change" and the use of our federal net operating loss carryforwards may be limited.

We face a number of risks as a result of the concentration of our operations and customers in Asia.

Many of our customers are located in Japan, the People's Republic of China ("PRC"), Korea, or Taiwan. Sales outside the U.S. accounted for approximately 100% , 94% and 83% of revenue for the years ended December 31, 2015, 2014, and 2013, respectively. We anticipate that sales outside the U.S. will continue to account for a substantial portion of our revenue in future periods. In addition, customers who incorporate our products into their products sell a substantial portion of their products outside of the U.S. All of our products are also manufactured outside of the U.S. and most of our current manufacturers are located in the PRC, Taiwan, or Singapore. Furthermore, most of our employees are located in the PRC, Japan and Taiwan. Our Asian operations require significant management attention and resources, and we are subject to many risks associated with operations in Asia, including, but not limited to:

- difficulties in managing international distributors and manufacturers due to varying time zones, languages and business customs;
- compliance with U.S. laws affecting operations outside of the U.S., such as the Foreign Corrupt Practices Act;
- reduced or limited protection of our IP, particularly in software, which is more prone to design piracy;
- difficulties in collecting outstanding accounts receivable balances;
- changes in tax rates, tax laws and the interpretation of those laws;
- difficulties regarding timing and availability of export and import licenses;
- ensuring that we obtain complete and accurate information from our Asian operations to make proper disclosures in the United States;
- political and economic instability;
- difficulties in maintaining sales representatives outside of the U.S. that are knowledgeable about our industry and products;
- changes in the regulatory environment in the PRC, Japan, Taiwan and Korea that may significantly impact purchases of our products by our customers or our customers' sales of their own products;
- outbreaks of health epidemics in the PRC or other parts of Asia;
- imposition of new tariffs, quotas, trade barriers and similar trade restrictions on our sales;
- varying employment and labor laws; and
- greater vulnerability to infrastructure and labor disruptions than in established markets.

Any of these factors could require a disproportionate share of management's attention, result in increased costs or decreased revenues, and could materially affect our product sales, financial condition and results of operations.

Our operations in Asia expose us to heightened risks due to natural disasters.

The risk of natural disasters in the Pacific Rim region is significant. Natural disasters in countries where our manufacturers or customers are located could result in disruption of our manufacturers' and customers' operations, resulting in significant delays in shipment of, or significant reductions in orders for, our products. There can be no assurance that we can locate additional manufacturing capacity or markets on favorable terms, or find new customers, in a timely manner, if at all. Natural disasters in this region could also result in:

- reduced end user demand due to the economic impact of any natural disaster;
- a disruption to the global supply chain for products manufactured in areas affected by natural disasters that are included in products purchased either by us or by our customers;
- an increase in the cost of products that we purchase due to reduced supply; and
- other unforeseen impacts as a result of the uncertainty resulting from a natural disaster.

We face additional risks associated with our operations in the PRC and our results of operations and financial position may

be harmed by changes in the PRC's political, economic or social conditions.

We have, and expect to continue to have, significant operations in the PRC. The economy of the PRC differs from the economies of many countries in important respects such as structure, government involvement, level of development, growth rate, capital reinvestment, allocation of resources, self-sufficiency, rate of inflation, foreign currency flows and balance of payments position, among others. There can be no assurance that the PRC's economic policies will be consistent or effective and our results of operations and financial position may be harmed by changes in the PRC's political, economic or social conditions.

Additionally, our Chinese subsidiary is considered a foreign-invested enterprise and is subject to laws and regulations applicable to foreign investment in the PRC and, in particular, laws applicable to foreign-invested enterprises. For example, the PRC's government imposes control over the convertibility of RMB into foreign currencies, which can cause difficulties converting cash held in RMB to other currencies. While the overall effect of legislation over the past two decades has significantly enhanced the protections afforded to various foreign investments in the PRC, the PRC has not developed a fully integrated legal system, and recently enacted laws and regulations may not sufficiently cover all aspects of economic activities in the PRC. Because these laws and regulations are relatively new, and published court decisions are limited and nonbinding in nature, the interpretation and enforcement of these laws and regulations involve uncertainties. In addition, the PRC's legal system is based in part on government policies and internal rules, some of which are not published on a timely basis or at all, which may have a retroactive effect. As a result, we may not be aware of our violation of these policies and rules until after the violation occurs. Any administrative and court proceedings in the PRC may be protracted, resulting in substantial costs and diversion of resources and management attention. However, since PRC administrative and court authorities have significant discretion in interpreting and implementing statutory and contractual terms, it may be more difficult to evaluate the outcome of administrative and court proceedings. These uncertainties may also impede our ability to enforce the contracts entered into by our PRC subsidiary and could materially and adversely affect our business and results of operations.

Our international operations expose us to risks resulting from the fluctuations of foreign currencies.

We are exposed to risks resulting from the fluctuations of foreign currencies, primarily those of Japan, Taiwan, Korea and the PRC. We sell our products to OEMs that incorporate our products into other products that they sell outside of the U.S. While sales of our products to OEMs are denominated in U.S. dollars, the products sold by OEMs are denominated in foreign currencies. Accordingly, any strengthening of the U.S. dollar against these foreign currencies will increase the foreign currency price equivalent of our products, which could lead to a change in the competitive nature of these products in the marketplace. This, in turn, could lead to a reduction in revenue.

In addition, a portion of our operating expenses, such as employee salaries and foreign income taxes, are denominated in foreign currencies. Accordingly, our operating results are affected by changes in the exchange rate between the U.S. dollar and those currencies. Any future strengthening of those currencies against the U.S. dollar will negatively impact our operating results by increasing our operating expenses as measured in U.S. dollars.

We may engage in financial hedging techniques in the future as part of a strategy to address potential foreign currency exchange rate fluctuations. These hedging techniques, however, may not be successful at reducing our exposure to foreign currency exchange rate fluctuations and may increase costs and administrative complexity.

As we have limited insurance coverage, any incurred liability resulting from uncovered claims could adversely affect our financial condition and results of operations.

Our insurance policies may not be adequate to fully offset losses from covered incidents, and we do not have coverage for certain losses. For example, we do not have earthquake insurance related to our Asian operations because adequate coverage is not offered at economically justifiable rates. If our insurance coverage is inadequate to protect us against catastrophic losses, any uncovered losses could adversely affect our financial condition and results of operations.

Our dependence on selling to distributors and integrators increases the complexity of managing our supply chain and may result in excess inventory or inventory shortages.

Selling to distributors and OEMs that build display devices based on specifications provided by branded suppliers, also referred to as integrators, reduces our ability to forecast sales accurately and increases the complexity of our business. Our sales are made on the basis of customer purchase orders rather than long-term purchase commitments. Our distributors, integrators and customers may cancel or defer purchase orders at any time but we must order wafer inventory from our contract manufacturers three to four months in advance.

The estimates we use for our advance orders from contract manufacturers are based, in part, on reports of inventory levels and production forecasts from our distributors and integrators, which act as intermediaries between us and the companies using our products. This process requires us to make numerous assumptions concerning demand and to rely on the accuracy of the reports and forecasts of our distributors and integrators, each of which may introduce error into our estimates of inventory requirements. Our failure to manage this challenge could result in excess inventory or inventory shortages that could materially impact our operating results or limit the ability of companies using our semiconductors to deliver their products. If we overestimate demand for our products, it could lead to significant charges for obsolete inventory. On the other hand, if we underestimate demand, we could forego revenue opportunities, lose market share and damage our customer relationships.

We may be unable to successfully manage any future growth, including the integration of any future acquisition or equity investment, which could disrupt our business and severely harm our financial condition.

If we fail to effectively manage any future internal growth, our operating expenses may increase more rapidly than our revenue, adversely affecting our financial condition and results of operations. To manage any future growth effectively in a rapidly evolving market, we must be able to maintain and improve our operational and financial systems, train and manage our employee base and attract and retain qualified personnel with relevant experience. We could spend substantial amounts of time and money in connection with expansion efforts for which we may not realize any profit. Our systems, procedures, controls or financial resources may not be adequate to support our operations and we may not be able to grow quickly enough to exploit potential market opportunities. In addition, we may not be able to successfully integrate the businesses, products, technologies or personnel of any entity that we might acquire in the future, and any failure to do so could disrupt our business and seriously harm our financial condition.

Continued compliance with regulatory and accounting requirements will be challenging and will require significant resources.

We spend a significant amount of management time and external resources to comply with changing laws, regulations and standards relating to corporate governance and public disclosure, including evolving SEC rules and regulations, NASDAQ Global Market rules, the Dodd-Frank Wall Street Reform and Consumer Protection Act and the Sarbanes-Oxley Act of 2002 which requires management's annual review and evaluation of internal control over financial reporting. Failure to comply with these laws and rules could lead to investigation by regulatory authorities, de-listing from the NASDAQ Global Market, or penalties imposed on us. If we are unable to maintain an effective system of internal controls, our results of operations could be harmed and our shareholders could lose confidence in the accuracy and completeness of our financial reports which in turn could cause our stock price to decline.

New regulations related to conflict minerals may adversely impact our business.

The SEC has adopted disclosure and reporting rules intended to improve transparency and accountability concerning the supply of certain minerals, known as conflict minerals, originating from the Democratic Republic of Congo ("DRC") and adjoining countries. These rules require us to determine the origin of certain materials used in our products and disclose whether we use any materials containing conflict minerals originating from the DRC and adjoining countries. There are costs associated with complying with these rules, including costs incurred to conduct inquiries to determine the sources of any materials containing conflict minerals used in our products, to fulfill our reporting requirements and to develop and implement potential changes to products, processes or sources of supply if it is determined that our products contain or use any conflict minerals from the DRC or adjoining countries. The implementation of these rules could also affect the sourcing, supply and pricing of materials used in our products. For example, there may only be a

limited number of suppliers offering “conflict free” materials, we cannot be sure that we will be able to obtain necessary "conflict free" materials from such suppliers in sufficient quantities or at reasonable prices. In addition, we may face reputational challenges if we determine that any of our products contain minerals that are not conflict free or if we are unable to sufficiently verify the origins for all materials containing conflict minerals used in our products through the procedures we may implement.

Our effective income tax rate is subject to unanticipated changes in, or different interpretations of tax rules and regulations and forecasting our effective income tax rate is complex and subject to uncertainty.

As a global company, we are subject to taxation by a number of taxing authorities and as such, our tax rates vary among the jurisdictions in which we operate. Unanticipated changes in our tax rates could affect our future results of operations. Our effective tax rates could be adversely affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in tax laws or the interpretation of tax laws either in the U.S. or abroad, or by changes in the valuation of our deferred tax assets and liabilities. The ultimate outcomes of any future tax audits are uncertain, and we can give no assurance as to whether an adverse result from one or more of them would have a material effect on our operating results and financial position.

The computation of income tax expense is complex as it is based on the laws of numerous tax jurisdictions and requires significant judgment on the application of complicated rules governing accounting for tax provisions under U.S. generally accepted accounting principles. Income tax expense for interim quarters is based on our forecasted tax rate for the year, which includes forward looking financial projections, including the expectations of profit and loss by jurisdiction, and contains numerous assumptions. For these reasons, our tax rate may be materially different than our forecast.

We rely upon certain critical information systems for the operation of our business, and the failure of any critical information system may result in serious harm to our business.

We maintain and rely upon certain critical information systems for the effective operation of our business. These information systems include telecommunications, the Internet, our corporate intranet, various computer hardware and software applications, network communications and e-mail. These information systems are subject to attacks, failures and access denials from a number of potential sources including viruses, destructive or inadequate code, power failures, and physical damage to computers, communication lines and networking equipment. To the extent that these information systems are under our control, we have implemented security procedures, such as virus protection software and emergency recovery processes, to address the outlined risks. Security procedures for information systems cannot be guaranteed to be failsafe and our inability to use or access these information systems at critical times could compromise the timely and efficient operation of our business. Additionally, any compromise of our information security could result in the unauthorized publication of our confidential business or proprietary information, cause an interruption in our operations, result in the unauthorized release of customer or employee data, result in a violation of privacy or other laws, or expose us to a risk of litigation or damage our reputation, any or all of which could harm our business and operating results.

Environmental laws and regulations have caused us to incur, and may again cause us to incur, significant expenditures to comply with applicable laws and regulations, and we may be assessed considerable penalties for noncompliance.

We are subject to numerous environmental laws and regulations. Compliance with current or future environmental laws and regulations could require us to incur substantial expenses which could harm our business, financial condition and results of operations. We have worked, and will continue to work, with our suppliers and customers to ensure that our products are compliant with enacted laws and regulations. Failure by us or our contract manufacturers to comply with such legislation could result in customers refusing to purchase our products and could subject us to significant monetary penalties in connection with a violation, either of which would have a material adverse effect on our business, financial condition and results of operations.

#### Company Risks Related to the Semiconductor Industry and Our Markets

Our highly integrated products and high-speed mixed signal products are difficult to manufacture without defects and the existence of defects could result in increased costs, delays in the availability of our products, reduced sales of products or claims against us.

The manufacture of semiconductors is a complex process and it is often difficult for semiconductor foundries to produce semiconductors free of defects. Because many of our products are more highly integrated than other semiconductors and incorporate mixed signal analog and digital signal processing, multi-chip modules and embedded memory technology, they are even more difficult to produce without defects. Defective products can be caused by design or manufacturing difficulties. Identifying quality problems can be performed only by analyzing and testing our semiconductors in a system after they have been manufactured. The difficulty in identifying defects is compounded because the process technology is unique to each of the multiple semiconductor foundries we contract with to



manufacture our products. Despite testing by both our customers and us, errors or performance problems may be found in existing or new semiconductors. Failure to achieve defect-free products may result in increased costs and delays in the availability of our products.

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Additionally, customers could seek damages from us for their losses and shipments of defective products may harm our reputation with our customers. We have experienced field failures of our semiconductors in certain customer applications that required us to institute additional testing. As a result of these field failures, we have incurred warranty costs due to customers returning potentially affected products and have experienced reductions in revenues due to delays in production. Our customers have also experienced delays in receiving product shipments from us that resulted in the loss of revenue and profits. Additionally, shipments of defective products could cause us to lose customers or to incur significant replacement costs, either of which would harm our reputation and our business. Any defects, errors or bugs could also interrupt or delay sales of our new products to our customers, which would adversely affect our financial results.

The development of new products is extremely complex and we may be unable to develop our new products in a timely manner which could result in a failure to obtain new design wins and/or maintain our current revenue levels. In addition to the inherent difficulty of designing complex integrated circuits, product development delays may result from:

- difficulties in hiring and retaining necessary technical personnel;
- difficulties in reallocating engineering resources and overcoming resource limitations;
- difficulties with contract manufacturers;
- changes to product specifications and customer requirements;
- changes to market or competitive product requirements; and
- unanticipated engineering complexities.

If we are not successful in the timely development of new products, we may fail to obtain new design wins and our financial results will be adversely affected.

Intense competition in our markets may reduce sales of our products, reduce our market share, decrease our gross profit and result in large losses.

We compete with specialized and diversified electronics and semiconductor companies that offer display processors or scaling components. Some of these include Actions Microelectronics Co., Ltd., i-Chips Technologies Inc., Intersil Corporation, Lattice Semiconductor Corporation, MediaTek Inc., Novatech Co., Ltd. Inc., NVIDIA Corporation, QUALCOMM Incorporated, Realtek Semiconductor Corp., Renesas Electronics America, Sigma Designs, Inc., Solomon Systech (International) Ltd., STMicroelectronics N.V., Sunplus Technology Co., Ltd., Texas Instruments Incorporated, and other companies. Potential and current competitors may include diversified semiconductor manufacturers and the semiconductor divisions or affiliates of some of our customers, including LG Electronics, Inc., Matsushita Electric Industrial Co., Ltd., Mitsubishi Digital Electronics America, Inc., NEC Corporation, Samsung Electronics Co., Ltd., ON Semiconductor Corporation, Seiko Epson Corporation, Sharp Electronics Corporation, Sony Corporation, and Toshiba America, Inc. In addition, start-up companies may seek to compete in our markets.

Many of our competitors have longer operating histories and greater resources to support development and marketing efforts than we do. Some of our competitors operate their own fabrication facilities. These competitors may be able to react more quickly and devote more resources to efforts that compete directly with our own. Additionally, any consolidation in the semiconductor industry may impact our competitive position. Our current or potential customers have developed, and may continue to develop, their own proprietary technologies and become our competitors.

Increased competition from both competitors and our customers' internal development efforts could harm our business, financial condition and results of operations by, for example, increasing pressure on our profit margin or causing us to lose sales opportunities. For example, frame rate conversion technology similar to that used in our line of MotionEngine® advanced video co-processors continues to be integrated into the SoC and display timing controller products of our competitors. We cannot assure you that we can compete successfully against current or potential competitors.

If we are not able to respond to the rapid technological changes and evolving industry standards in the markets in which we compete, or seek to compete, our products may become less desirable or obsolete.

The markets in which we compete or seek to compete are subject to rapid technological change and miniaturization capabilities, frequent new product introductions, changing customer requirements for new products and features and evolving industry standards. The introduction of new technologies and emergence of new industry standards could render our products less desirable or obsolete, which could harm our business and significantly decrease our revenue. Examples of changing industry standards include the growing use of broadband to deliver video content, increased display resolution and size, faster screen refresh rates, video capability such as high definition, Ultra HD, and 3D, the proliferation of new display devices and the drive to network display devices together. Our failure to predict market needs accurately or to timely develop new competitively priced products or product enhancements that incorporate new industry standards and technologies, including integrated circuits with increasing levels of integration and new features, using smaller geometry process technologies, may harm market acceptance and sales of our products.

Our products are incorporated into our customers' products, which have different parts and specifications and utilize multiple protocols that allow them to be compatible with specific computers, video standards and other devices. If our customers' products are not compatible with these protocols and standards, consumers will return, or not purchase these products and the markets for our customers' products could be significantly reduced. Additionally, if the technology used by our customers becomes less competitive due to cost, customer preferences or other factors relative to alternative technologies, sales of our products could decline.

Dependence on a limited number of sole-source, third-party manufacturers for our products exposes us to possible shortages based on low manufacturing yield, errors in manufacturing, uncontrollable lead-times for manufacturing, capacity allocation, price increases with little notice, volatile inventory levels and delays in product delivery, any of which could result in delays in satisfying customer demand, increased costs and loss of revenue.

We do not own or operate a semiconductor fabrication facility and do not have the resources to manufacture our products internally. We rely on a limited number of foundries and assembly and test vendors to produce all of our wafers and for completion of finished products. Our wafers are not fabricated at more than one foundry at any given time and our wafers typically are designed to be fabricated in a specific process at only one foundry. Sole sourcing each product increases our dependence on our suppliers. We have limited control over delivery schedules, quality assurance, manufacturing yields, potential errors in manufacturing and production costs. We do not have long-term supply contracts with our third-party manufacturers, so they are not obligated to supply us with products for any specific period of time, quantity or price, except as may be provided in a particular purchase order. Our suppliers can increase the prices of the products we purchase from them with little notice, which may cause us to increase the prices to our customers and harm our competitiveness. Because our requirements represent only a small portion of the total production capacity of our contract manufacturers, they could reallocate capacity to other customers during periods of high demand for our products, as they have done in the past. We expect this may occur again in the future.

Establishing a relationship with a new contract manufacturer in the event of delays or increased prices would be costly and burdensome. The lead time to make such a change would be at least nine months, and the estimated time for us to adapt a product's design to a particular contract manufacturer's process is at least four months. Additionally, we have, and may continue to choose new foundries to manufacture our wafers which may require us to modify our design methodology flow for the process technology and intellectual property cores of the new foundry. If we have to qualify a new foundry or packaging, assembly and testing supplier for any of our products or if we are unable to obtain our products from our contract manufacturers on schedule, at costs that are acceptable to us, or at all, we could incur significant delays in shipping products, our ability to satisfy customer demand could be harmed, our revenue from the sale of products may be lost or delayed and our customer relationships and ability to obtain future design wins could be damaged.

We use a customer-owned tooling process for manufacturing most of our products, which exposes us to the possibility of poor yields and unacceptably high product costs.

We build most of our products on a customer-owned tooling basis, whereby we directly contract the manufacture of our products, including wafer production, assembly and test. As a result, we are subject to increased risks arising from wafer manufacturing yields and risks associated with coordination of the manufacturing, assembly and testing process. Poor product yields result in higher product costs, which could make our products less competitive if we increase our

prices to compensate for our higher costs, or could result in lower gross profit margins if we do not increase our prices.

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We depend on manufacturers of our semiconductor products not only to respond to changes in technology and industry standards but also to continue the manufacturing processes on which we rely.

To respond effectively to changes in technology and industry standards, we depend on our foundries to implement advanced semiconductor technologies and our operations could be adversely affected if those technologies are unavailable, delayed or inefficiently implemented. In order to increase performance and functionality and reduce the size of our products, we are continuously developing new products using advanced technologies that further miniaturize semiconductors and we are dependent on our foundries to develop and provide access to the advanced processes that enable such miniaturization. We cannot be certain that future advanced manufacturing processes will be implemented without difficulties, delays or increased expenses. Our business, financial condition and results of operations could be materially adversely affected if advanced manufacturing processes are unavailable to us, substantially delayed or inefficiently implemented.

Creating the capacity for new technological changes may cause manufacturers to discontinue older manufacturing processes in favor of newer ones. We must then either retire the affected part or port (develop) a new version of the part that can be manufactured with a newer process technology. In the event that a manufacturing process is discontinued, our current suppliers may be unwilling or unable to manufacture our current products. We may not be able to place last time buy orders for the old technology or find alternate manufacturers of our products to allow us to continue to produce products with the older technology while we expend the significant costs for research and development and time to migrate to new, more advanced processes. For example, we utilize 0.18um and 0.15um standard logic processes, which may only be available for the next five to seven years. Additionally, a portion of our products use 0.11um technology for memory die, which is being phased out in favor of 65nm technology to increase yields and decrease cost. Because of this transition, our customers must re-qualify the affected parts.

Shortages of materials used in the manufacturing of our products and other key components of our customers' products may increase our costs, impair our ability to ship our products on time and delay our ability to sell our products.

From time to time, shortages of components and materials that are critical to the manufacture of our products and our customers' products may occur. Such critical components and materials include semiconductor wafers and packages, double data rate memory die, display components, analog-to-digital converters, digital receivers, video decoders and voltage regulators. If material shortages occur, we may incur additional costs or be unable to ship our products to our customers in a timely fashion, both of which could harm our business and adversely affect our results of operations.

Because of our long product development process and sales cycles, we may incur substantial costs before we earn associated revenue and ultimately may not sell as many units of our products as we originally anticipated.

We develop products based on anticipated market and customer requirements and incur substantial product development expenditures, which can include the payment of large up-front, third-party license fees and royalties, prior to generating associated revenue. Our work under these projects is technically challenging and places considerable demands on our limited resources, particularly on our most senior engineering talent. Additionally, the transition to smaller geometry process technologies continues to significantly increase the cost and complexity of new product development, particularly with regards to tooling, software tools, third party IP and engineering resources. Because the development of our products incorporates not only our complex and evolving technology, but also our customers' specific requirements, a lengthy sales process is often required before potential customers begin the technical evaluation of our products. Our customers typically perform numerous tests and extensively evaluate our products before incorporating them into their systems. The time required for testing, evaluation and design of our products into a customer's system can take up to nine months or more. It can take an additional nine months or longer before a customer commences volume shipments of systems that incorporate our products, if at all. Because of the lengthy development and sales cycles, we will experience delays between the time we incur expenditures for research and development, sales and marketing and inventory and the time we generate revenue, if any, from these expenditures.

Furthermore, we have entered into and may in the future enter into, co-development agreements that do not guarantee future sales volumes and limit our ability to sell the developed products to other customers. The exclusive nature of these development agreements increases our dependence on individual customers, particularly since we are limited in the number of products we are able to develop at any one time.

If actual sales volumes for a particular product are substantially less than originally anticipated, we may experience large write-offs of capitalized license fees, software development tools, product masks, inventories or other capitalized or deferred product-related costs, any of which would negatively affect our operating results.

Our developed software may be incompatible with industry standards and challenging and costly to implement, which could slow product development or cause us to lose customers and design wins.

We provide our customers with software development tools and with software that provides basic functionality for our integrated circuits and enables enhanced connectivity of our customers' products. Software development is a complex process and we are dependent on software development languages and operating systems from vendors that may limit our ability to design software in a timely manner. Also, as software tools and interfaces change rapidly, new software languages introduced to the market may be incompatible with our existing systems and tools, requiring significant engineering efforts to migrate our existing systems in order to be compatible with those new languages. Software development disruptions could slow our product development or cause us to lose customers and design wins. The integration of software with our products adds complexity, may extend our internal development programs and could impact our customers' development schedules. This complexity requires increased coordination between hardware and software development schedules and increases our operating expenses without a corresponding increase in product revenue. This additional level of complexity lengthens the sales cycle and may result in customers selecting competitive products requiring less software integration.

The competitiveness and viability of our products could be harmed if necessary licenses of third-party technology are not available to us on terms that are acceptable to us or at all.

We license technology from independent third parties that is incorporated into our products or product enhancements. Future products or product enhancements may require additional third-party licenses that may not be available to us on terms that are acceptable to us or at all. In addition, in the event of a change in control of one of our licensors, it may become difficult to maintain access to its licensed technology. If we are unable to obtain or maintain any third-party license required to develop new products and product enhancements, we may have to obtain substitute technology with lower quality or performance standards, or at greater cost, either of which could seriously harm the competitiveness of our products.

Our limited ability to protect our IP and proprietary rights could harm our competitive position by allowing our competitors to access our proprietary technology and to introduce similar products.

Our ability to compete effectively with other companies depends, in part, on our ability to maintain the proprietary nature of our technology, including our semiconductor designs and software code. We provide the computer programming code for our software to customers in connection with their product development efforts, thereby increasing the risk that customers will misappropriate our proprietary software. We rely on a combination of patent, copyright, trademark and trade secret laws, as well as nondisclosure agreements and other methods, to help protect our proprietary technologies. As of December 31, 2015, we held 135 patents and had 33 patent applications pending for protection of our significant technologies. Competitors in both the U.S. and foreign countries, many of whom have substantially greater resources than we do, may apply for and obtain patents that will prevent, limit or interfere with our ability to make and sell our products, or they may develop similar technology independently or design around our patents. Effective patent, copyright, trademark and trade secret protection may be unavailable or limited in foreign countries.

We cannot assure you that the degree of protection offered by patent or trade secret laws will be sufficient.

Furthermore, we cannot assure you that any patents will be issued as a result of any pending applications or that any claims allowed under issued patents will be sufficiently broad to protect our technology. We may incur significant costs to stop others from infringing our patents. In addition, it is possible that existing or future patents may be invalidated, diluted, circumvented, challenged or licensed to others.

Others may bring infringement or indemnification actions against us that could be time-consuming and expensive to defend.

We may become subject to claims involving patents or other intellectual property rights. In recent years, there has been significant litigation in the U.S. and in other jurisdictions involving patents and other intellectual property rights. This litigation is particularly prevalent in the semiconductor industry, in which a number of companies aggressively use their patent portfolios to bring infringement claims. In recent years, there has been an increase in the filing of so-called "nuisance suits," alleging infringement of intellectual property rights. These claims may be asserted initially or as counterclaims in response to claims made by a company alleging infringement of intellectual property rights. These suits pressure defendants into entering settlement arrangements to quickly dispose of such suits, regardless of

merit. We may also face claims brought by companies that are organized solely to hold and enforce patents. In addition, we may be required to indemnify our customers against IP claims related to their usage of our products as certain of our agreements include indemnification provisions from third parties relating to our intellectual property.



IP claims could subject us to significant liability for damages and invalidate our proprietary rights. Responding to such claims, regardless of their merit, can be time-consuming, result in costly litigation, divert management's attention and resources and cause us to incur significant expenses. As each claim is evaluated, we may consider the desirability of entering into settlement or licensing agreements. No assurance can be given that settlements will occur or that licenses can be obtained on acceptable terms or that litigation will not occur. In the event there is a temporary or permanent injunction entered prohibiting us from marketing or selling certain of our products, or a successful claim of infringement against us requiring us to pay damages or royalties to a third-party and we fail to develop or license a substitute technology, our business, results of operations or financial condition could be materially adversely affected.

Any IP litigation or claims also could force us to do one or more of the following:

- stop selling products using technology that contains the allegedly infringing IP;
- attempt to obtain a license to the relevant IP, which may not be available on terms that are acceptable to us or at all;
- attempt to redesign those products that contain the allegedly infringing IP; or
- pay damages for past infringement claims that are determined to be valid or which are arrived at in settlement of such litigation or threatened litigation.

If we are forced to take any of the foregoing actions, we may incur significant additional costs or be unable to manufacture and sell our products, which could seriously harm our business. In addition, we may not be able to develop, license or acquire non-infringing technology under reasonable terms. These developments could result in an inability to compete for customers or otherwise adversely affect our results of operations.

Our products are characterized by average selling prices that can decline over relatively short periods of time, which will negatively affect our financial results unless we are able to reduce our product costs or introduce new products with higher average selling prices.

Average selling prices for our products can decline over relatively short periods of time, while many of our product costs are fixed. When our average selling prices decline, our gross profit declines unless we are able to sell more units or reduce the cost to manufacture our products. We have experienced declines in our average selling prices and expect that we will continue to experience them in the future, although we cannot predict when they may occur or how severe they will be. Our financial results will suffer if we are unable to offset any reductions in our average selling prices by increasing our sales volumes, reducing our costs, adding new features to our existing products or developing new or enhanced products in a timely manner with higher selling prices or gross profits.

The cyclical nature of the semiconductor industry may lead to significant variances in the demand for our products and could harm our operations.

In the past, the semiconductor industry has been characterized by significant downturns and wide fluctuations in supply and demand. Also, the industry has experienced significant fluctuations in anticipation of changes in general economic conditions, including economic conditions in Asia, Europe and North America. The cyclical nature of the semiconductor industry has also led to significant variances in product demand and production capacity. We have experienced, and may continue to experience, periodic fluctuations in our financial results because of changes in industry-wide conditions.

#### Other Risks

The interest of our current or potential significant shareholders may conflict with other shareholders and they may attempt to effect changes at the Company or acquire control over the Company, which could adversely affect the Company's results of operations and financial condition.

Shareholders of the Company may from time to time engage in proxy solicitations, advance shareholder proposals, acquire control over the Company or otherwise attempt to effect changes, including by directly voting their shares on shareholder proposals. Campaigns by shareholders to effect changes at publicly traded companies are sometimes led by investors seeking to increase short-term shareholder value through actions such as financial restructuring, increased debt, special dividends, stock repurchases or sales of assets or the entire company. Responding to proxy contests and other actions by activist shareholders can be costly and time-consuming, disrupting the Company's operations and diverting the attention of the Company's Board of Directors and senior management from the pursuit of business strategies. Additionally, uncertainty over the Company's direction and leadership may negatively impact the Company's relationship with its customers and make it more difficult to attract and retain qualified personnel and business partners. As a result, shareholder campaigns could adversely affect the Company's results of operations and

financial condition.

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Future sales of our equity could result in significant dilution to our existing shareholders and depress the market price of our common stock.

We may need to seek additional capital from time to time. If this financing is obtained through the issuance of equity securities, debt convertible into equity securities, options or warrants to acquire equity securities or similar instruments or securities, our existing shareholders will experience dilution in their ownership percentage upon the issuance, conversion or exercise of such securities and such dilution could be significant. For example, we issued approximately 3.7 million, 3.0 million and 4.2 million shares of our common stock in underwritten registered public offerings in August 2015, August 2013 and May 2011, respectively. New equity securities issued by us could have rights, preferences or privileges senior to those of our common stock.

In addition, any such issuance by us or sales of our securities by our security holders, or the perception that such issuances or sales could occur, could negatively impact the market price of our securities. For example, a number of shareholders own significant blocks of our common stock. If one or more of these shareholders were to sell large portions of their holdings in a relatively short time, for liquidity or other reasons, the prevailing market price of our common stock could be negatively affected. This could result in further potential dilution to our existing shareholders and the impairment of our ability to raise capital through the sale of equity, debt or other securities.

The price of our common stock has and may continue to fluctuate substantially.

Our stock price and the stock prices of technology companies similar to Pixelworks have been highly volatile. The price of our common stock may decline and the value of our shareholders' investment may be reduced regardless of our performance.

The daily trading volume of our common stock has historically been relatively low, although, in the three most recent years, trading volume increased compared to historical levels. As a result of the historically low volume, our shareholders may be unable to sell significant quantities of common stock in the public trading markets without a significant reduction in the price of our common shares. Additionally, market fluctuations, as well as general economic and political conditions, including recessions, interest rate changes or international currency fluctuations, may negatively impact the market price of our common stock. Other factors that could negatively impact our stock price include:

- actual or anticipated fluctuations in our operating results;
- changes in or failure to meet expectations as to our future financial performance;
- changes in or failure to meet financial estimates of securities analysts;
- announcements by us or our competitors of technological innovations, design wins, contracts, standards, acquisitions or divestitures;
- the operating and stock price performance of other comparable companies;
- issuances or proposed issuances of equity, debt or other securities by us, or sales of securities by our security holders; and
- changes in market valuations of other technology companies.

Any inability or perceived inability of investors to realize a gain on an investment in our common stock could have an adverse effect on our business, financial condition and results of operations by potentially limiting our ability to retain our customers, to attract and retain qualified employees and to raise capital. In addition, in the past, following periods of volatility in the overall market and the market price of a particular company's securities, securities class action litigation has often been instituted against these companies. This litigation, if instituted against us, could result in substantial costs and a diversion of our management's attention and resources.

We may be unable to maintain compliance with NASDAQ Marketplace Rules which could cause our common stock to be delisted from the NASDAQ Global Market. This could result in the lack of a market for our common stock, cause a decrease in the value of our common stock, and adversely affect our business, financial condition and results of operations.

Under the NASDAQ Marketplace Rules our common stock must maintain a minimum price of \$1.00 per share for continued inclusion on the NASDAQ Global Market. Our stock price was below \$1.00 as recently as May 6, 2009 and we cannot guarantee that our stock price will remain at or above \$1.00 per share. If the price again drops below \$1.00 per share, our stock could become subject to delisting, and we may seek shareholder approval for a reverse split, which in turn could produce adverse effects and may not result in a long-term or permanent increase in the price of

our common stock.

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In addition to the minimum \$1.00 per share requirement, the NASDAQ Global Market has other listing requirements, including: (i) a minimum of \$50.0 million in total asset value and \$50.0 million in revenues in the latest fiscal year or in two of the last three fiscal years; (ii) a minimum of \$50.0 million in market value of listed securities, \$15.0 million in market value of publicly held securities and at least 1.1 million publicly held shares; or (iii) a minimum of \$10.0 million in shareholders' equity. As of December 31, 2015, we were in compliance with these listing requirements based on the market value and holdings of our listed securities, and on the amount of shareholders' equity. However, as recently as June 30, 2013, our shareholders' equity was below \$10.0 million and we currently have, and expect to continue to have, a total asset value of less than \$50.0 million. In addition, as recently as during the second quarter of 2013, the aggregate market value of our listed securities was below \$50.0 million. Our stock price is volatile and we believe that we continue to remain susceptible to the market value of our listed securities and/or the market value of our publicly held securities falling below \$50.0 million and \$15.0 million, respectively. Accordingly, we cannot assure you that we will be able to continue to comply with the NASDAQ's listing requirements. Should we be unable to remain in compliance with these requirements, our stock could become subject to delisting.

If our common stock is delisted, trading of the stock will most likely take place on an over-the-counter market established for unlisted securities. An investor is likely to find it less convenient to sell, or to obtain accurate quotations in seeking to buy, our common stock on an over-the-counter market, and many investors may not buy or sell our common stock due to difficulty in accessing over-the-counter markets, or due to policies preventing them from trading in securities not listed on a national exchange or other reasons. For these reasons and others, delisting would adversely affect the liquidity, trading volume and price of our common stock, causing the value of an investment in us to decrease and having an adverse effect on our business, financial condition and results of operations by limiting our ability to attract and retain qualified executives and employees and limiting our ability to raise capital. The continued uncertain global economic environment and volatility in global credit and financial markets could materially and adversely affect our business and results of operations.

The state of the global economy continues to be uncertain. As a result of these conditions, our manufacturers, vendors and customers might experience deterioration of their businesses, cash flow shortages and difficulty obtaining financing which could result in interruptions or delays in the performance of any contracts, reductions and delays in customer purchases, delays in or the inability of customers to obtain financing to purchase our products, and bankruptcy of customers. Furthermore, the constraints in the capital and credit markets, may limit the ability of our customers to meet their liquidity needs, which could result in an impairment of their ability to make timely payments to us and reduce their demand for our products, adversely impacting our results of operations and cash flows. This environment has also made it difficult for us to accurately forecast and plan future business activities.

The anti-takeover provisions of Oregon law and in our articles of incorporation could adversely affect the rights of the holders of our common stock, including by preventing a sale or takeover of us at a price or prices favorable to the holders of our common stock.

Provisions of our articles of incorporation and bylaws and provisions of Oregon law may have the effect of delaying or preventing a merger or acquisition of us, making a merger or acquisition of us less desirable to a potential acquirer or preventing a change in our management, even if our shareholders consider the merger, acquisition or change in management favorable or if doing so would benefit our shareholders. In addition, these provisions could limit the price that investors would be willing to pay in the future for shares of our common stock. The following are examples of such provisions:

- if the number of directors is fixed by the board at eight or more, our board of directors is divided into three classes serving staggered terms, which would make it more difficult for a group of shareholders to quickly replace a majority of directors;
- our board of directors is authorized, without prior shareholder approval, to create and issue preferred stock with voting or other rights or preferences that could impede the success of any attempt to acquire us or to effect a change of control, commonly referred to as "blank check" preferred stock;
- members of our board of directors can be removed only for cause and at a meeting of shareholders called expressly for that purpose, by the vote of 75 percent of the votes then entitled to be cast for the election of directors;
- our board of directors may alter our bylaws without obtaining shareholder approval; and shareholders are required to provide advance notice for nominations for election to the board of directors or for proposing matters to be acted upon at a shareholder meeting;
- Oregon law permits our board to consider other factors beyond stockholder value in evaluating any acquisition offer (so-called "expanded constituency" provisions); and
- a supermajority (67%) vote of shareholders is required to approve certain fundamental transactions.

Item 1B. Unresolved Staff Comments.

Not applicable.

## Item 2. Properties.

We lease facilities around the world to house our engineering, sales, customer support, administrative and operations functions. We do not own any of our facilities. As of December 31, 2015, our major facilities consisted of the following:

Location	Function(s)	Square Feet Utilized	Lease Expiration
China	Engineering; sales; customer support	48,000	Various dates through May 2017
California	Administration; engineering; sales	19,000	December 2018
Taiwan	Customer support; sales; operations; engineering	16,000	Various dates through November 2017
Oregon	Administration	5,000	December 2016
Japan	Sales; customer support	3,000	January 2017

## Item 3. Legal Proceedings.

We are subject to legal matters that arise from time to time in the ordinary course of our business. Although we currently believe that resolving such matters, individually or in the aggregate, will not have a material adverse effect on our financial position, our results of operations, or our cash flows, these matters are subject to inherent uncertainties and our view of these matters may change in the future.

## Item 4. Mine Safety Disclosures.

Not Applicable.

## PART II

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

## Market for Registrant's Common Equity and Related Stockholder Matters

Our common stock is listed for trading on the NASDAQ Global Market under the symbol "PXLW". Our stock began trading on May 19, 2000. The following table sets forth, for the periods indicated, the highest and lowest sales prices of our common stock as reported on the NASDAQ Global Market.

Fiscal 2015	High	Low
Fourth Quarter	\$3.89	\$2.21
Third Quarter	6.33	3.40
Second Quarter	7.13	4.12
First Quarter	6.18	4.30
Fiscal 2014	High	Low
Fourth Quarter	\$6.63	\$3.86
Third Quarter	9.83	5.75
Second Quarter	7.98	4.68
First Quarter	9.05	4.62

As of February 29, 2016, there were 71 shareholders of record of our common stock and the last per share sales price of the common stock on that date was \$2.00. The number of beneficial owners of our common stock is substantially greater than the number of shareholders of record because a significant portion of our outstanding common stock is held in broker "street name" for the benefit of individual investors.

To date, we have not declared any cash dividends and we currently expect to retain any earnings to finance the expansion and development of our business. In addition, our financial covenants may limit our ability to pay dividends. Accordingly, there is no assurance that we will declare or pay future dividends as they are dependent upon future earnings, capital requirements, our operating and financial condition and approval by our board of directors.



## Performance Graph

This performance graph shall not be deemed "soliciting material" or to be "filed" with the Securities and Exchange Commission ("SEC") for purposes of Section 18 of the Securities Exchange Act of 1934, or otherwise be subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of Pixelworks, Inc. under the Securities Exchange Act of 1934 or the Securities Act of 1933.

Set forth below is a graph that compares the cumulative total shareholder return for our common stock with the cumulative total return on the following indexes:

✦ NASDAQ U.S. Benchmark TR Index

✦ NASDAQ OMX Electrical Components and Equipment Index

The graph assumes that \$100 was invested in our common stock and each index on December 31, 2010. In accordance with guidelines of the SEC, the shareholder return for each entity in the peer group index has been weighted on the basis of market capitalization. The stock price performance in the graph is not intended to forecast or indicate future stock price performance.

COMPARISON OF FIVE-YEAR CUMULATIVE TOTAL RETURN  
AMONG PIXELWORKS, INC., THE NASDAQ U.S. BENCHMARK TR INDEX AND  
THE NASDAQ OMX ELECTRICAL COMPONENTS AND EQUIPMENT INDEX.

## Item 6. Selected Financial Data.

The following selected consolidated financial data should be read together with the consolidated financial statements and the notes to the consolidated financial statements and “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” which are included elsewhere in this report.

In thousands, except per share data.

	Year ended December 31,				
	2015	2014	2013	2012	2011
<b>Consolidated Statements of Operations Data</b>					
Revenue, net	\$59,517	\$60,923	\$48,118	\$59,710	\$64,609
Cost of revenue	30,224	29,142	21,708	29,862	34,242
Gross profit	29,293	31,781	26,410	29,848	30,367
Operating expenses:					
Research and development	24,644	25,296	20,664	20,757	22,906
Selling, general and administrative	14,453	15,434	13,883	14,944	15,266
Total operating expenses	39,097	40,730	34,547	35,701	38,172
Loss from operations	(9,804 )	(8,949 )	(8,137 )	(5,853 )	(7,805 )
Other income (expense), net	(446 )	(493 )	(405 )	(412 )	1,380
Loss before income taxes	(10,250 )	(9,442 )	(8,542 )	(6,265 )	(6,425 )
Provision (benefit) for income taxes	320	518	328	(571 )	141
Net loss	\$(10,570 )	\$(9,960 )	\$(8,870 )	\$(5,694 )	\$(6,566 )
Net loss per share - basic and diluted	\$(0.42 )	\$(0.44 )	\$(0.45 )	\$(0.31 )	\$(0.40 )
Weighted average shares outstanding - basic and diluted	25,088	22,766	19,816	18,252	16,330
	December 31,				
	2015	2014	2013	2012	2011
<b>Consolidated Balance Sheets Data</b>					
Cash and cash equivalents	\$26,591	\$17,926	\$20,805	\$13,404	\$15,092
Working capital	21,796	11,470	15,163	10,508	13,210
Total assets	43,842	34,144	36,744	29,541	36,377
Long-term liabilities, net of current portion	2,773	3,570	2,878	3,776	5,690
Total shareholders’ equity	26,376	15,684	18,942	14,668	17,800

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

Overview

Pixelworks designs, develops and markets video and pixel processing semiconductors, intellectual property cores, software and custom ASIC solutions for high-end digital video applications. Our products allow manufacturers and developers of digital display and projection devices to manufacture screens of all sizes that display the highest video quality with minimum power consumption. Our core video display processing technology intelligently processes video signals from a variety of sources and optimizes the image for the viewer. The continued advancement of display technology and rapid growth of video consumption on digital delivery systems and mobile applications has increased the demand for video display processing technology in recent years. Our products can be used in a range of devices from large flat panel displays to small low power mobile applications. Our products are designed to reduce overall system power requirements and reduce costs for our customers by minimizing bandwidth, reducing panel costs and optimizing the video display pipeline efficiency. Our primary target markets include digital projection systems, tablets, smartphones, and Ultrabook™ devices.

We have an intellectual property portfolio of 135 patents related to the visual display of digital image data. We focus our research and development efforts on developing video enhancement solutions for our target markets that increase performance, video quality and device functionality while reducing power consumed. We seek to expand our technology portfolio through internal development and co-development with business partners, and we continually evaluate acquisition opportunities and other ways to leverage our technology into other high-value markets.

Pixelworks was founded in 1997 and is incorporated under the laws of the state of Oregon.

Historically, significant portions of our revenue have been generated by sales to a relatively small number of end customers and distributors. We sell our products worldwide through a direct sales force, distributors and manufacturers' representatives. We sell to distributors in China, Europe, Japan, Korea, Southeast Asia, Taiwan and the U.S., and our manufacturers' representatives support some of our Korean and European sales. Our distributors typically provide engineering support to our end customers and often have valuable and established relationships with our end customers. In certain countries in which we operate, it is customary to sell to distributors. While distributor payment to us is not dependent upon the distributor's ability to resell the product or to collect from the end customer, the distributors may provide longer payment terms to end customers than those we would offer.

Significant portions of our products are sold overseas. Sales outside the U.S. accounted for approximately 100%, 94% and 83% of revenue in 2015, 2014 and 2013, respectively. Our integrators, branded manufacturers and branded suppliers incorporate our products into systems that are sold worldwide. All of our revenue to date has been denominated in U.S. dollars.

Results of Operations

Year ended December 31, 2015 compared with year ended December 31, 2014, and year ended December 31, 2014 compared with year ended December 31, 2013.

Revenue, net

Net revenue was as follows (in thousands):

	Year ended December 31,			2015 v. 2014		2014 v. 2013	
	2015	2014	2013	\$ change	% change	\$ change	% change
Revenue, net	\$59,517	\$60,923	\$48,118	\$(1,406)	(2)%	\$12,805	27%
2015 v. 2014							

Net revenue decreased \$1.4 million, or 2%, from 2014 to 2015. Revenue related to integrated circuit ("IC") product sales was \$59.5 million and \$57.7 million for 2015 and 2014, respectively. Revenue related to licensing of intellectual property ("IP") was negligible for 2015 and was \$3.2 million for 2014.

The \$1.8 million increase in IC product sales from 2014 to 2015, was primarily attributable to increased unit sales into the digital projector and mobile device markets and decreased unit sales into the television and panel markets, which generally have a lower average selling price ("ASP") than digital projector market products. The decrease in sales into the television and panel markets was due to a transition to lower volume niche products.

The \$3.2 million of licensing revenue recorded in 2014 was due to achieving milestones under licensing agreements entered into during 2012 and 2013.

2014 v. 2013

Net revenue increased \$12.8 million, or 27%, from 2013 to 2014. Revenue related to IC product sales was \$57.7 million and \$40.0 million for 2014 and 2013, respectively. Revenue related to licensing of IP was \$3.2 million and \$8.1 million for 2014 and 2013, respectively.

The increase related to IC product sales was primarily attributable to a 30% increase in units sold and an 11% increase in ASP. The increase in units sold was primarily due to increased sales into the digital projector market, largely a result of an improving macro-economic environment and its effect on end market demand as well as sales of new products. The increase in ASP was primarily due to increased sales of new products into the digital projector market, as a percentage of our overall units sold. Our newer projector products have a higher ASP than many of our other digital projector products.

During the third quarter of 2013, we entered into an agreement with a third party to provide a non-exclusive license for a package of our technologies and to provide certain services, under which we received a total of \$10.3 million. We recorded approximately \$2.2 million and \$8.1 million of licensing revenue in 2014 and 2013, respectively, due to achieving milestones under this agreement.

Additionally, we recorded approximately \$1.0 million of licensing revenue in 2014 due to achieving the final milestone under a licensing agreement entered into during 2012.

## Cost of revenue and gross profit

Cost of revenue and gross profit were as follows (in thousands):

	Year ended December 31,						
	2015	% of revenue	2014	% of revenue	2013	% of revenue	
Direct product costs and related overhead <sup>1</sup>	\$29,843	50	% \$28,402	47	% \$20,230	42	%
Inventory charges <sup>2</sup>	199	0	267	0	24	0	
Licensing costs <sup>3</sup>	—	0	146	0	921	2	
Other cost of revenue <sup>4</sup>	182	0	327	1	533	1	
Total cost of revenue	\$30,224	51	% \$29,142	48	% \$21,708	45	%
Gross profit	\$29,293	49	% \$31,781	52	% \$26,410	55	%

<sup>1</sup> Includes purchased materials, assembly, test, labor, employee benefits and royalties, all of which are related to sales of IC products.

<sup>2</sup> Includes charges to reduce inventory to lower of cost or market and a benefit for sales of previously written down inventory.

<sup>3</sup> Includes direct labor costs and allocated overhead associated with licensing agreements.

<sup>4</sup> Includes stock-based compensation and additional amortization of a non-cancelable prepaid royalty.

## 2015 v. 2014

Cost of revenue increased to 51% of revenue in 2015 from 48% of revenue in 2014. The increase in cost of revenue as a percentage of revenue was primarily due to a decrease in the recognition of higher margin licensing revenue during 2015 compared to 2014.

Our gross margin is subject to variability based on changes in revenue levels, recognition of licensing revenue, product mix, ASPs, startup costs, and the timing and execution of manufacturing ramps as well as other factors.

## 2014 v. 2013

Cost of revenue increased to 48% of revenue in 2014 from 45% of revenue in 2013. The increase in cost of revenue as a percentage of revenue was primarily due to a decrease in the recognition of higher margin licensing revenue during 2014 compared to 2013. This increase was partially offset by a decrease in cost of revenue as a percentage of revenue due to a decrease in licensing costs during 2014 compared to 2013. Excluding the impact of licensing revenue and licensing costs, cost of revenue as a percentage of revenue decreased 2% during 2014 compared to 2013, primarily due to relatively constant overhead costs compared to increased IC revenue over the same periods.

### Research and development

Research and development expense includes compensation and related costs for personnel, development-related expenses including non-recurring engineering and fees for outside services, depreciation and amortization, expensed equipment, facilities and information technology expense allocations and travel and related expenses.

### Co-development agreement

During 2012, we entered into a best efforts co-development agreement (the “Co-development Agreement”) with a customer to defray a portion of the research and development expenses that would be incurred in connection with our development of an IC product to be sold exclusively to the customer. Under the Co-development Agreement, we retain ownership of any modifications or improvements that are made to our pre-existing IP and may use such improvements in products sold to other customers.

At the completion of certain development milestones under the Co-development Agreement, we invoiced the customer and recognized offsets to research and development expense of \$3.5 million in each of 2012 and 2013. All milestones under the Co-development Agreement were completed as of December 31, 2013. We began selling units of the product developed under the Co-development Agreement during the second quarter of 2014.

Research and development expense was as follows (in thousands):

	Year ended December 31,			2015 v. 2014		2014 v. 2013	
	2015	2014	2013	\$ change	% change	\$ change	% change
Research and development	\$24,644	\$25,296	\$20,664	\$(652)	(3)%	\$4,632	22%
2015 v. 2014							

Research and development expense decreased \$0.7 million from 2014 to 2015. The decrease was primarily due to a \$0.5 million decrease in stock-based compensation expense primarily due to the timing of awards granted and a \$0.5 million decrease in depreciation and amortization expense due to the timing of development activities. These decreases were partially offset by a \$0.2 million increase in facilities and information technology allocations. The decreases were also offset by a \$0.1 million increase due to a benefit to research and development recognized in 2014 for a reduction in direct labor costs and allocated overhead associated with the utilization of research and development engineers on license revenue agreements; these costs were recorded in cost of revenue. There was no similar benefit to research and development in 2015.

### 2014 v. 2013

Research and development expense increased \$4.6 million from 2013 to 2014. The increase was primarily due to recognizing a benefit to research and development expense of \$3.5 million related to the Co-development Agreement in 2013, for which a similar benefit was not recognized in 2014. The increase was also due to a \$1.2 million increase in stock-based compensation expense primarily due to restricted stock units granted to senior management during the fourth quarter of 2013 and the third quarter of 2014 and a \$0.3 million increase in compensation expense primarily due to annual merit salary increases and an increased management bonus accrual, partially offset by a decrease in headcount. Lastly, the increase was due to a \$0.8 million decrease in the benefit recognized in 2014 compared to 2013 in direct labor costs and allocated overhead associated with the utilization of research and development engineers on licensing revenue agreements; these costs were recorded in cost of revenue. These increases were partially offset by a \$1.2 million decrease in non-recurring engineering expense due to the timing of development activities.

## Selling, general and administrative

Selling, general and administrative expense includes compensation and related costs for personnel, sales commissions, allocations for facilities and information technology expenses, travel, outside services and other general expenses incurred in our sales, marketing, customer support, management, legal and other professional and administrative support functions.

Selling, general and administrative expense was as follows (in thousands):

	Year ended December 31,			2015 v. 2014		2014 v. 2013	
	2015	2014	2013	\$ change	% change	\$ change	% change
Selling, general and administrative	\$14,453	\$15,434	\$13,883	\$(981)	(6)%	\$1,551	11%
2015 v. 2014							

Selling, general and administrative expense decreased \$1.0 million from 2014 to 2015. The decrease was primarily due to a \$0.8 million decrease in stock-based compensation expense primarily due to the timing of awards granted and a \$0.2 million decrease in compensation expense primarily due to a decrease in headcount.

2014 v. 2013

Selling, general and administrative expense increased \$1.6 million from 2013 to 2014. The increase was primarily due to a \$1.0 million increase in stock-based compensation expense primarily due to restricted stock units granted to senior management during the fourth quarter of 2013 and the third quarter of 2014, a \$0.5 million increase in outside services expense primarily due to increased resources focused on marketing our mobile products and a \$0.3 million increase in compensation expense primarily due to an increased management bonus accrual and annual merit salary increases. In addition, these increases were partially offset by insignificant partially offsetting increases and decreases across the remaining expense categories, which resulted in a \$0.2 million net decrease.

## Interest expense and other, net

Interest expense and other, net, consisted of the following (in thousands):

	Year ended December 31,			\$ change	
	2015	2014	2013	2015 v. 2014	2014 v. 2013
Interest expense and other, net	\$(446)	\$(493)	\$(405)	\$47	\$(88)

Interest expense and other, net consists of interest expense and interest income. The change over both periods is primarily due to the timing of software license contracts entered into with extended payment terms.

## Provision for income taxes

The provision for income taxes was as follows (in thousands):

	Year ended December 31,		
	2015	2014	2013
Provision for income taxes	\$320	\$518	\$328

The income tax expense recorded for the year ended December 31, 2015 is comprised of \$0.6 million in current and deferred tax expense for our profitable cost-plus foreign jurisdictions and accruals for tax contingencies in foreign jurisdictions, partially offset by \$0.3 million for the reversal of previously recorded tax contingencies due to the expiration of the applicable statute of limitations. The income tax expense recorded for the year ended December 31, 2014 is comprised of \$0.8 million in current and deferred tax expense for our profitable cost-plus foreign jurisdictions and accruals for tax contingencies in foreign jurisdictions, partially offset by \$0.3 million for the reversal of previously recorded tax contingencies due to the expiration of the applicable statute of limitations. The income tax expense recorded for the year ended December 31, 2013 is comprised of \$0.8 million in current and deferred tax expense for our profitable cost-plus foreign jurisdictions and accruals for tax contingencies in foreign jurisdictions, partially offset by \$0.5 million for the reversal of previously recorded tax contingencies due to the expiration of the applicable statute of limitations.

As of December 31, 2015 and 2014, we continue to record a full valuation allowance against our U.S. net deferred tax assets as it is not more likely than not that we will realize a benefit from these assets in a future period. We have not provided a valuation allowance against any of our other foreign net deferred tax assets as we have concluded it is more likely than not that we will realize a benefit from these assets in a future period because our subsidiaries in these jurisdictions are cost-plus taxpayers.

As of December 31, 2015, we have federal and state net operating loss carryforwards of approximately \$214.4 million and \$16.9 million, respectively, which will expire between 2016 and 2035. As of December 31, 2015, we have available federal and state research and experimentation tax credit carryforwards of approximately \$8.5 million and \$3.6 million, respectively, which begin expiring in 2019. We have a general foreign tax credit of \$3.2 million which will begin expiring in 2016. Our ability to utilize our federal net operating losses may be limited by Section 382 of the Internal Revenue Code of 1986, as amended, which imposes an annual limit on the ability of a corporation that undergoes an "ownership change" to use its net operating loss carryforwards to reduce its tax liability. An ownership change is generally defined as a greater than 50% point increase in equity ownership by 5% shareholders in any three-year period.

#### Liquidity and Capital Resources

##### Cash and cash equivalents

Total cash and cash equivalents increased \$8.7 million from \$17.9 million at December 31, 2014 to \$26.6 million at December 31, 2015. The increase resulted primarily from \$16.4 million in net proceeds from our underwritten registered public offering of our common stock (see "Equity offering"), \$1.0 million in proceeds from the issuances of common stock under our employee equity incentive plans, partially offset by \$4.9 million used for purchases of property and equipment, licensed technology and payments on other asset financings and \$3.8 million used in operating activities primarily due to changes in working capital.

Total cash and cash equivalents decreased \$2.9 million from \$20.8 million at December 31, 2013 to \$17.9 million at December 31, 2014. The decrease resulted primarily from \$5.9 million used for purchases of property and equipment and payments on other asset financings partially offset by \$1.3 million in proceeds from the issuances of common stock under our employee equity incentive plans and \$1.7 million provided by operating activities primarily due to changes in working capital.

As of December 31, 2015, our cash and cash equivalents balance of \$26.6 million consisted of \$1.3 million in cash and \$25.3 million in U.S. denominated money market funds. Although we did not hold short- or long-term investments as of December 31, 2015, our investment policy requires that our portfolio maintains a weighted average maturity of less than 12 months. Additionally, no maturities can extend beyond 24 months and concentrations with individual securities are limited. At the time of purchase, short-term credit rating must be rated at least A-1 / P-1 / F-1 by at least two Nationally Recognized Statistical Rating Organizations ("NRSRO") and securities of issuers with a long-term credit rating must be rated at least A or A2 by at least two NRSROs. Our investment policy is reviewed at least annually by our Audit Committee.

As of December 31, 2015, we had total cash and cash equivalents of \$26.6 million, of which approximately \$1.2 million was held by our foreign subsidiaries. We provide for U.S. taxes on the earnings of our foreign subsidiaries and will only recognize U.S. taxable income from repatriation to the extent of our unremitted earnings. Any income recognized from the repatriation will be offset by our net operating loss carryforwards. As of December 31, 2015, we could access all cash held by our foreign subsidiaries without incurring significant cash taxes.

##### Accounts receivable, net

Accounts receivable, net increased to \$6.0 million at December 31, 2015 from \$4.6 million at December 31, 2014. Average number of days sales outstanding increased to 40 days at December 31, 2015 from 28 days at December 31, 2014. The increase in accounts receivable and days sales outstanding was primarily due to the timing of shipments.

##### Inventories

Inventories increased to \$3.3 million at December 31, 2015 from \$2.9 million at December 31, 2014. Inventory turnover decreased to 7.8 at December 31, 2015 from 11.3 at December 31, 2014, primarily due to higher average inventory balances and decreased cost of goods sold during the fourth quarter of 2015 compared to the fourth quarter of 2014. Inventory turnover is calculated based on annualized quarterly operating results and average inventory



balances during the quarter.

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## Capital resources

### Equity offering

On August 12, 2015, we completed the sale of 3,737,500 shares of common stock, in an underwritten registered offering at a price to the public of \$4.75 per share. Net proceeds to the Company, after deducting underwriting discounts and commissions and other expenses payable by us, were approximately \$16.4 million.

### Short-term line of credit

On December 21, 2010, we entered into a Loan and Security Agreement (the "Revolving Loan Agreement") with Silicon Valley Bank (the "Bank"). On December 14, 2012, we and the Bank entered into Amendment No. 1 (the "Amendment No. 1") to the Revolving Loan Agreement. The Revolving Loan Agreement, as amended, provides a secured working capital-based revolving line of credit (the "Revolving Line") in an aggregate amount of up to the lesser of (i) \$10.0 million, or (ii) \$1.0 million plus 80% of eligible domestic accounts receivable and certain foreign accounts receivable. On December 4, 2013, we and the Bank entered into Amendment No. 2 (the "Amendment No. 2") to the Revolving Loan Agreement which changes the maturity date of the revolving line of credit provided pursuant to the Revolving Loan Agreement to January 1, 2016. The maturity date was previously December 14, 2014, as provided by Amendment No. 1 to the Revolving Loan Agreement. On December 18, 2015, we and the Bank entered into Amendment No. 3 to the Revolving Loan Agreement which changes the maturity date of the revolving line of credit provided pursuant to the Revolving Loan Agreement to December 30, 2016. In addition, the Revolving Loan Agreement, as amended, provides for non-formula advances of up to \$10.0 million which may be made solely during the last five business days of any fiscal month or quarter and which must be repaid by the Company on or before the fifth business day after the applicable fiscal month or quarter end. Due to their repayment terms, non-formula advances do not provide the Company with usable liquidity.

The Revolving Loan Agreement, as amended, contains customary affirmative and negative covenants as well as customary events of default. The occurrence of an event of default could result in the acceleration of the Company's obligations under the Revolving Loan Agreement, as amended, and an increase to the applicable interest rate, and would permit the Bank to exercise remedies with respect to its security interest. As of December 31, 2015, we were in compliance with all of the terms of the Revolving Loan Agreement, as amended.

Short-term borrowings outstanding under the Revolving Line consisted of non-formula advances of \$3.0 million as of December 31, 2015 and as of December 31, 2014, both advances were repaid within required terms.

### Liquidity

As of December 31, 2015, we had no long-term debt, our short-term debt of \$3.0 million was repaid within required terms and excluding our non-formula advance on our short-term line of credit, our cash and cash equivalents balance was highly liquid. We anticipate that our existing working capital will be adequate to fund our operating, investing and financing needs for the next twelve months. We may pursue financing arrangements including the issuance of debt or equity securities or reduce expenditures, or both, to meet the Company's cash requirements. There is no assurance that, if required, we will be able to raise additional capital or reduce discretionary spending to provide the required liquidity which, in turn, may have an adverse effect on our results of operations, financial position and cash flows.

From time to time, we may evaluate acquisitions of businesses, products or technologies that complement our business. Any transactions, if consummated, may consume a material portion of our working capital or require the issuance of equity securities that may result in dilution to existing shareholders. Our ability to generate cash from operations is also subject to substantial risks described in Part I, "Item 1A., Risk Factors." If any of these risks occur, we may be unable to generate or sustain positive cash flow from operating activities. We would then be required to use existing cash and cash equivalents to support our working capital and other cash requirements. If additional funds are required to support our working capital requirements, acquisitions or other purposes, we may seek to raise funds through debt financing, equity financing or from other sources. If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our shareholders could be significantly diluted, and these newly-issued securities may have rights, preferences or privileges senior to those of existing shareholders. If we raise additional funds by obtaining loans from third parties, the terms of those financing arrangements may include negative covenants or other restrictions on our business that could impair our operating flexibility, and would also require us to incur interest expense. We can provide no assurance that additional financing will be available at all or, if

available, that we would be able to obtain additional financing on terms favorable to us.

### Critical Accounting Policies and Estimates

The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires us to make estimates and judgments that affect the amounts reported. On an ongoing basis, we evaluate our estimates, including those related to revenue recognition, product returns, warranty obligations, bad debts, inventories, property and equipment, impairment of long-lived assets, valuation of share-based payments, income taxes, litigation and other contingencies. We base our estimates on historical experience and various other assumptions that we believe to be reasonable under the circumstances. Actual results may differ from these estimates under different assumptions or conditions.

We believe the following critical accounting policies affect our more significant judgments and estimates used in the preparation of our consolidated financial statements:

**Revenue Recognition.** We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed and determinable, and collection is reasonably assured. For product sales, we require customers to provide purchase orders prior to shipment and we consider delivery to occur upon shipment provided title and risk of loss have passed to the customer based on the shipping terms. These conditions are generally satisfied upon shipment of the underlying product.

On occasion, we derive revenue from the license of our internally developed IP. IP licensing agreements that we enter into generally provide licensees the right to incorporate our IP components in their products with terms and conditions that vary by licensee. Our license fee arrangements generally include multiple deliverables and we are required to determine whether there is more than one unit of accounting. To the extent that the deliverables are separable into multiple units of accounting, we allocate the total fee on such arrangements to the individual units of accounting using management's best estimate of selling price ("ESP"), if third party evidence ("TPE") or vendor specific objective evidence ("VSOE") does not exist. We defer revenue recognition for consideration that is contingent upon future performance or other contractual terms.

The Company's process for determining its ESP for deliverables without VSOE or TPE considers multiple factors that may vary depending upon the unique facts and circumstances related to each deliverable. The key factors considered by the Company in developing the ESPs include the nature and complexity of different technologies being licensed, our cost to provide the deliverables, the availability of substitute technologies in the marketplace and the Company's historical pricing practices. We then recognize revenue for each unit of accounting depending on the nature of the deliverable(s) comprising the unit of accounting in accordance with the revenue recognition criteria mentioned above. **Sales Returns and Allowances.** Our customers do not have a stated right to return product except for replacement of defective products under our warranty program discussed below. However, we have accepted customer returns on a case-by-case basis as customer accommodations in the past. As a result, we provide for these returns in our reserve for sales returns and allowances. At the end of each reporting period, we estimate the reserve for returns based on historical experience and knowledge of any applicable events or transactions.

Certain of our distributors have stock rotation provisions in their distributor agreements, which allow them to return a limited amount of their in-stock inventory in exchange for products of equal value. At the end of each reporting period, we estimate the reserve for stock rotations based on historical experience and knowledge of any applicable events or transactions.

**Product Warranties.** We warrant that our products will be free from defects in materials and workmanship for a period of twelve months from delivery. Warranty repairs are guaranteed for the remainder of the original warranty period. Our warranty is limited to repairing or replacing products, or refunding the purchase price.

At the end of each reporting period, we estimate a reserve for warranty returns based on historical experience and knowledge of any applicable events or transactions. While we engage in extensive product quality programs and processes, which include actively monitoring and evaluating the quality of our suppliers, should actual product failure rates or product replacement costs differ from our estimates, revisions to the estimated warranty liability may be required.

**Allowance for Doubtful Accounts.** We offer credit to customers after careful examination of their creditworthiness. We maintain an allowance for doubtful accounts for estimated losses that may result from the inability of our

customers to make required payments. At the end of each reporting period, we estimate the allowance for doubtful accounts based on our account-by-account risk analysis of outstanding receivable balances. The determination to write-off specific accounts receivable balances is made based on the likelihood of collection and past due status. Past due status is based on invoice date and terms specific to each customer. If the financial condition of our customers were to deteriorate, resulting in an impairment of their ability to make payments, additional allowances may be required.

**Inventory Valuation.** We value inventory at the lower of cost or market. In addition, we write down any obsolete, unmarketable or otherwise impaired inventory to net realizable value. The determination of obsolete or excess inventory requires us to estimate the future demand for our products. The estimate of future demand is compared to inventory levels to determine the amount, if any, of obsolete or excess inventory. If actual market conditions are less favorable than those we projected at the time the inventory was written down, additional inventory write-downs may be required. Inventory valuation is re-evaluated on a quarterly basis.

**Useful Lives and Recoverability of Equipment and Other Long-Lived Assets.** We evaluate the remaining useful life and recoverability of equipment and other assets, including identifiable intangible assets with definite lives, whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. If there is an indicator of impairment, we prepare an estimate of future, undiscounted cash flows expected to result from the use of each asset and its eventual disposition. If these cash flows are less than the carrying value of the asset, we adjust the carrying amount of the asset to its estimated fair value. While we have concluded that the carrying value of our long-lived assets is recoverable as of December 31, 2015, our analysis is dependent upon our estimates of future cash flows and our actual results may vary.

**Stock-Based Compensation.** Stock-based compensation cost is measured at the grant date, based on the estimated fair value of the award using the Black-Scholes option pricing model for stock options and market price for restricted stock units. The use of the Black-Scholes option pricing model, requires certain estimates, including an expected forfeiture rate and expected term of options granted. We also make decisions regarding the method of calculating expected volatilities and the risk-free interest rate used in the option-pricing model. The resulting calculated fair value of stock options is recognized as compensation expense over the requisite service period, which is generally the vesting period. When there are changes to the assumptions used in the option-pricing model, including fluctuations in the market price of our common stock, there will be variations in the calculated fair value of our future stock option awards, which results in variation in the compensation cost recognized. Additionally, any modification of an award that increases its fair value will require us to recognize additional expense.

**Income Taxes.** We record deferred income taxes for temporary differences between the amount of assets and liabilities for financial and tax reporting purposes and we record a valuation allowance to reduce our deferred tax assets to the amount that is more likely than not to be realized. We also regularly conduct a comprehensive review of our uncertain tax positions. In this regard, an uncertain tax position represents our expected treatment of a tax position taken in a filed tax return, or planned to be taken in a future tax return, that has not been reflected in measuring income tax expense for financial reporting purposes. Until these positions are sustained by the taxing authorities, we do not recognize the tax benefits resulting from such positions and report the tax effects for uncertain tax positions in our consolidated balance sheets.

#### Contractual Payment Obligations

A summary of our contractual obligations as of December 31, 2015 is as follows:

Contractual Obligation	Payments Due By Period				
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
Operating leases	\$3,515	\$1,735	\$1,780	\$—	\$—
Payments on accrued balances related to asset financings	1,911	1,348	563	—	—
Estimated purchase commitments to contract manufacturers	4,421	4,421	—	—	—
Total <sup>1</sup>	\$9,847	\$7,504	\$2,343	\$—	\$—

<sup>1</sup> We are unable to reliably estimate the timing of future payments related to uncertain tax positions and repatriation of foreign earnings; therefore, \$1.9 million of income taxes payable has been excluded from the table above.

#### Off-Balance Sheet Arrangements

We do not have any off-balance sheet arrangements that have, or are reasonably likely to have, a material current or future effect on our financial condition, results of operations, liquidity, capital expenditures or capital resources.

Recent Accounting Pronouncements

See "Note 2: Summary of Significant Accounting Policies" in Part II, Item 8 of this Form 10-K for a description of recent accounting pronouncements, including the expected dates of adoption and estimated effects, if any, on our consolidated financial statements.

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

Interest Rate Risk

As of December 31, 2015, all of our cash equivalents were held in highly liquid money market accounts, accordingly, we do not have significant exposure to changes in interest rates.

Exchange Rate Risk

We are exposed to risks resulting from the fluctuations of foreign currencies, primarily those of Japan, Taiwan, Korea and the People's Republic of China. We sell our products to Original Equipment Manufacturers ("OEMs") that incorporate our products into other products that they sell outside of the U.S. While sales of our products to OEMs are denominated in U.S. dollars, the products sold by OEMs are denominated in foreign currencies. Accordingly, any strengthening of the U.S. dollar against these foreign currencies will increase the foreign currency price equivalent of our products, which could lead to a change in the competitive nature of these products in the marketplace.

In addition, a portion of our operating expenses, such as employee salaries and foreign income taxes, are denominated in foreign currencies. Accordingly, our operating results are affected by changes in the exchange rate between the U.S. dollar and those currencies. Any future strengthening of those currencies against the U.S. dollar will negatively impact our operating results by increasing our operating expenses as measured in U.S. dollars. We analyze our exposure to foreign currency fluctuations and may engage in financial hedging techniques in the future to attempt to minimize the effect of these potential fluctuations; however, foreign currency exchange rate fluctuations may adversely affect our financial results in the future.

Item 8. Financial Statements and Supplementary Data.

The following financial statements and reports are included in Item 8:

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as of December 31, 2015 and 2014

Consolidated Statements of Operations for the years ended December 31, 2015, 2014 and 2013

Consolidated Statements of Comprehensive Loss for the years ended December 31, 2015, 2014 and 2013

Consolidated Statements of Cash Flows for the years ended December 31, 2015, 2014 and 2013

Consolidated Statements of Shareholders' Equity for the years ended December 31, 2015, 2014 and 2013

Notes to Consolidated Financial Statements



Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders  
Pixelworks, Inc:

We have audited the accompanying consolidated balance sheets of Pixelworks, Inc. and subsidiaries (the “Company”) as of December 31, 2015 and 2014, and the related consolidated statements of operations, comprehensive loss, shareholders’ equity, and cash flows for each of the years in the three year period ended December 31, 2015. These consolidated financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on these consolidated financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of Pixelworks, Inc. and subsidiaries as of December 31, 2015 and 2014, and the results of their operations and their cash flows for each of the years in the three year period ended December 31, 2015, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company’s internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO) and our report dated March 9, 2016 expressed an unqualified opinion on the effectiveness of the Company’s internal control over financial reporting.

/s/ KPMG LLP

Portland, Oregon  
March 9, 2016

PIXELWORKS, INC.  
CONSOLIDATED BALANCE SHEETS

(In thousands, except share data)

	December 31,	
	2015	2014
<b>ASSETS</b>		
Current assets:		
Cash and cash equivalents	\$26,591	\$17,926
Accounts receivable, net	5,988	4,648
Inventories	3,266	2,898
Prepaid expenses and other current assets	644	888
Total current assets	36,489	26,360
Property and equipment, net	6,543	6,402
Other assets, net	810	1,382
Total assets	\$43,842	\$34,144
<b>LIABILITIES AND SHAREHOLDERS' EQUITY</b>		
Current liabilities:		
Accounts payable	\$2,944	\$3,154
Accrued liabilities and current portion of long-term liabilities	8,528	8,539
Current portion of income taxes payable	221	197
Short-term line of credit	3,000	3,000
Total current liabilities	14,693	14,890
Long-term liabilities, net of current portion	831	1,476
Income taxes payable, net of current portion	1,942	2,094
Total liabilities	17,466	18,460
Commitments and contingencies (Note 6)		
Shareholders' equity:		
Preferred stock, \$0.001 par value, 50,000,000 shares authorized, none issued	—	—
Common stock, \$0.001 par value; 250,000,000 shares authorized, 27,764,208 and 23,220,534 shares issued and outstanding as of December 31, 2015 and 2014, respectively	390,520	369,253
Accumulated other comprehensive income	6	11
Accumulated deficit	(364,150)	(353,580)
Total shareholders' equity	26,376	15,684
Total liabilities and shareholders' equity	\$43,842	\$34,144
See accompanying notes to consolidated financial statements.		

PIXELWORKS, INC.  
CONSOLIDATED STATEMENTS OF OPERATIONS  
(In thousands, except per share data)

	Year Ended December 31,			
	2015	2014	2013	
Revenue, net	\$59,517	\$60,923	\$48,118	
Cost of revenue (1)	30,224	29,142	21,708	
Gross profit	29,293	31,781	26,410	
Operating expenses:				
Research and development (2)	24,644	25,296	20,664	
Selling, general and administrative (3)	14,453	15,434	13,883	
Total operating expenses	39,097	40,730	34,547	
Loss from operations	(9,804	) (8,949	) (8,137	)
Interest expense and other, net	(446	) (493	) (405	)
Loss before income taxes	(10,250	) (9,442	) (8,542	)
Provision for income taxes	320	518	328	
Net loss	\$(10,570	) \$(9,960	) \$(8,870	)
Net loss per share - basic and diluted	\$(0.42	) \$(0.44	) \$(0.45	)
Weighted average shares outstanding - basic and diluted	25,088	22,766	19,816	
(1) Includes:				
Stock-based compensation	\$196	\$262	\$164	
Additional amortization of non-cancelable prepaid royalty	(14	) 65	369	
(2) Includes stock-based compensation	1,927	2,441	1,204	
(3) Includes stock-based compensation	1,798	2,599	1,640	
See accompanying notes to consolidated financial statements.				

## PIXELWORKS, INC.

## CONSOLIDATED STATEMENTS OF COMPREHENSIVE LOSS

(In thousands)

	Year Ended December 31,		
	2015	2014	2013
Net loss	\$(10,570	) \$(9,960	) \$(8,870
Other comprehensive income (loss):			
Foreign pension adjustment	(6	) 112	37
Tax effect of pension adjustment	1	(19	) (6
Total comprehensive loss	\$(10,575	) \$(9,867	) \$(8,839

See accompanying notes to consolidated financial statements.

PIXELWORKS, INC.  
CONSOLIDATED STATEMENTS OF CASH FLOWS  
(In thousands)

	Year Ended December 31,		
	2015	2014	2013
Cash flows from operating activities:			
Net loss	\$(10,570)	) \$(9,960	) \$(8,870 )
Adjustments to reconcile net loss to net cash provided by (used in) operating activities:			
Depreciation and amortization	4,263	4,514	4,409
Stock-based compensation	3,921	5,302	3,008
Reversal of uncertain tax positions	(323)	) (270	) (452 )
Deferred income tax expense	23	89	154
Gain on asset disposal	—	—	(12)
Other	53	72	61
Changes in operating assets and liabilities:			
Accounts receivable, net	(1,340)	) 113	(989 )
Inventories	(368)	) (1,235	) 1,039 )
Prepaid expenses and other current and long-term assets, net	163	2,253	(637)
Accounts payable	(210)	) 1,827	(937)
Accrued current and long-term liabilities	346	(1,446)	) 1,837
Income taxes payable	195	429	207
Net cash provided by (used in) operating activities	(3,847)	) 1,688	(1,182)
Cash flows from investing activities:			
Purchases of property and equipment	(3,012)	) (2,861	) (1,694)
Purchases of licensed technology	(55)	) —	(598)
Proceeds from sales of property and equipment	—	—	13
Net cash used in investing activities	(3,067)	) (2,861)	) (2,279)
Cash flows from financing activities:			
Net proceeds from equity offering	16,356	—	9,625
Payments on asset financings	(1,767)	) (3,013	) (2,243)
Proceeds from issuances of common stock	990	1,307	480
Proceeds from line of credit	—	—	3,000
Net cash provided by (used in) financing activities	15,579	(1,706)	) 10,862
Net increase (decrease) in cash and cash equivalents	8,665	(2,879)	) 7,401
Cash and cash equivalents, beginning of period	17,926	20,805	13,404
Cash and cash equivalents, end of period	\$26,591	\$17,926	\$20,805
Supplemental disclosure of cash flow information:			
Cash paid for income taxes, net of refunds received	\$366	\$213	\$382
Cash paid during the year for interest	104	193	149
Non-cash investing and financing activities:			
Acquisitions of property and equipment and other assets under extended payment terms	\$765	\$3,381	\$1,266
See accompanying notes to consolidated financial statements.			

## PIXELWORKS, INC.

## CONSOLIDATED STATEMENTS OF SHAREHOLDERS' EQUITY

(In thousands, except share data)

	Common Stock		Accumulated Other Comprehensive Income (Loss)	Accumulated Deficit	Total Shareholders' Equity
	Shares	Amount			
Balance as of December 31, 2012	18,400,783	349,531	(113 )	(334,750 )	14,668
Stock issued under employee equity incentive plans	581,649	480	—	—	480
Equity offering	3,024,500	9,625	—	—	9,625
Stock-based compensation expense	—	3,008	—	—	3,008
Net loss	—	—	—	(8,870 )	(8,870 )
Foreign pension adjustment, net of tax of \$6	—	—	31	—	31
Balance as of December 31, 2013	22,006,932	362,644	(82 )	(343,620 )	18,942
Stock issued under employee equity incentive plans	1,213,602	1,307	—	—	1,307
Stock-based compensation expense	—	5,302	—	—	5,302
Net loss	—	—	—	(9,960 )	(9,960 )
Foreign pension adjustment, net of tax of \$19	—	—	93	—	93
Balance as of December 31, 2014	23,220,534	369,253	11	(353,580 )	15,684
Stock issued under employee equity incentive plans	806,174	990	—	—	990
Equity offering	3,737,500	16,356	—	—	16,356
Stock-based compensation expense	—	3,921	—	—	3,921
Net loss	—	—	—	(10,570 )	(10,570 )
Foreign pension adjustment, net of tax of \$(1)	—	—	(5 )	—	(5 )
Balance as of December 31, 2015	27,764,208	\$390,520	\$ 6	\$ (364,150 )	\$ 26,376

See accompanying notes to consolidated financial statements.

PIXELWORKS, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(In thousands, except share and per share data)

NOTE 1. BASIS OF PRESENTATION

Nature of Business

Pixelworks designs, develops and markets video and pixel processing semiconductors, intellectual property cores, software and custom ASIC solutions for high-end digital video applications. Our products allow manufacturers and developers of digital display and projection devices to manufacture screens of all sizes that display the highest video quality with minimum power consumption. Our core video display processing technology intelligently processes video signals from a variety of sources and optimizes the image for the viewer. The continued advancement of display technology and rapid growth of video consumption on digital delivery systems and mobile applications has increased the demand for video display processing technology in recent years. Our products can be used in a range of devices from large flat panel displays to small low power mobile applications. Our products are designed to reduce overall system power requirements and reduce costs for our customers by minimizing bandwidth, reducing panel costs and optimizing the video display pipeline efficiency. Our primary target markets include digital projection systems, tablets, smartphones, and Ultrabook™ devices.

We have an intellectual property portfolio of 135 patents related to the visual display of digital image data. We focus our research and development efforts on developing video enhancement solutions for our target markets that increase performance, video quality and device functionality while reducing power consumed. We seek to expand our technology portfolio through internal development and co-development with business partners, and we continually evaluate acquisition opportunities and other ways to leverage our technology into other high-value markets.

Pixelworks was founded in 1997 and is incorporated under the laws of the state of Oregon.

Our consolidated financial statements include the accounts of Pixelworks and its wholly-owned subsidiaries.

Intercompany accounts and transactions have been eliminated. All foreign subsidiaries use the U.S. dollar as the functional currency, and as a result, transaction gains and losses are included in the consolidated statements of operations. Transaction losses were \$125, \$159 and \$123 for the years ended December 31, 2015, 2014 and 2013, respectively.

Use of Estimates

The preparation of consolidated financial statements in conformity with U.S. generally accepted accounting principles ("U.S. GAAP") requires us to make estimates and judgments that affect amounts reported in the financial statements and accompanying notes. Our significant estimates and judgments include those related to revenue recognition, product returns, warranty obligations, bad debts, inventories, property and equipment, impairment of long-lived assets, valuation of share-based payments, income taxes, litigation and other contingencies. The actual results experienced could differ materially from our estimates.

NOTE 2. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Cash and Cash Equivalents

We classify all cash and highly liquid investments with original maturities of three months or less at the date of purchase as cash and cash equivalents. Cash equivalents, which consist of U.S. denominated money market funds totaled \$25,343 and \$17,480 as of December 31, 2015 and 2014, respectively.

Accounts Receivable

Accounts receivable are recorded at invoiced amount and do not bear interest when recorded or accrue interest when past due. We maintain an allowance for doubtful accounts for estimated losses that may result from the inability of our customers to make required payments. At the end of each reporting period, we estimate the allowance for doubtful accounts based on an account-by-account risk analysis of outstanding receivable balances. The determination to write-off specific accounts receivable balances is made based on the likelihood of collection and past due status. Past due status is based on invoice date and terms specific to each customer.

Inventories

Inventories consist of finished goods and work-in-process, and are stated at the lower of standard cost (which approximates actual cost on a first-in, first-out basis) or market (net realizable value).



Property and Equipment

Property and equipment are stated at cost. Depreciation and amortization is calculated on a straight-line basis over the estimated useful life of the assets which are generally as follows:

Software	Lesser of 3 years or contractual license term
Equipment, furniture and fixtures	2 years
Tooling	2 to 4 years
Leasehold improvements	Lesser of lease term or estimated useful life

The cost of property and equipment repairs and maintenance is expensed as incurred.

Licensed Technology

We have capitalized licensed technology assets in other long-term assets. These assets are stated at cost and are amortized on a straight-line basis over the term of the license or the estimated life of the asset, if the license is not contractually limited, which is generally two to five years.

Useful Lives and Recoverability of Equipment and Other Long-Lived Assets

We evaluate the remaining useful life and recoverability of equipment and other assets, including identifiable intangible assets with definite lives, whenever events or changes in circumstances indicate that the carrying amount of the assets may not be recoverable. If there is an indicator of impairment, we prepare an estimate of future, undiscounted cash flows expected to result from the use of each asset and its eventual disposition. If these cash flows are less than the carrying value of the asset, we adjust the carrying amount of the asset to its estimated fair value.

Revenue Recognition

We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed and determinable, and collection is reasonably assured. For product sales, we require customers to provide purchase orders prior to shipment and we consider delivery to occur upon shipment provided title and risk of loss have passed to the customer based on the shipping terms. These conditions are generally satisfied upon shipment of the underlying product.

There are no customer acceptance provisions associated with our products, and except for replacement of defective products under our warranty program discussed below, we have no obligation to accept product returns from end customers; however, we have accepted returns on a case-by-case basis as customer accommodations in the past. As a result, we provide for estimated reductions to gross profit for these sales returns in our reserve for sales returns and allowances. At the end of each reporting period, we estimate the reserve based on historical experience and knowledge of any applicable events or transactions. The reserve is included in accrued liabilities in our consolidated balance sheets.

A portion of our sales are made to distributors under agreements that grant the distributor limited stock rotation rights and price protection on in-stock inventory. The stock rotation rights allow these distributors to exchange a limited amount of their in-stock inventory for other Pixelworks product. As a result, we provide for estimated reductions to gross profit for these stock rotations in our reserve for sales returns and allowances. At the end of each reporting period, we estimate the reserve based on historical experience and knowledge of any applicable events or transactions. The reserve is included in accrued liabilities in our consolidated balance sheets.

On occasion, we derive revenue from the license of our internally developed intellectual property ("IP"). IP licensing agreements that we enter into generally provide licensees the right to incorporate our IP components in their products with terms and conditions that vary by licensee. Our license fee arrangements generally include multiple deliverables and we are required to determine whether there is more than one unit of accounting. To the extent that the deliverables are separable into multiple units of accounting, we allocate the total fee on such arrangements to the individual units of accounting using management's best estimate of selling price ("ESP"), if third party evidence ("TPE") or vendor specific objective evidence ("VSOE") does not exist. We defer revenue recognition for consideration that is contingent upon future performance or other contractual terms.

The Company's process for determining its ESP for deliverables without VSOE or TPE considers multiple factors that may vary depending upon the unique facts and circumstances related to each deliverable. The key factors considered by the Company in developing the ESPs include the nature and complexity of the licensed technologies, our cost to provide the deliverables, the availability of substitute technologies in the marketplace and the Company's historical pricing practices. We then recognize revenue for each unit of accounting depending on the nature of the deliverable(s) comprising the unit of accounting in accordance with the revenue recognition criteria mentioned above.

Fees under these agreements generally include (a) license fees relating to our IP, (b) engineering services, and (c) support services. Historically, each of these elements have standalone value and therefore each are treated as separate units of accounting. Any future licensing arrangements will be analyzed based on the specific facts and circumstances which may be different than our historical licensing arrangements.

For deliverables related to licenses of our technology that involve significant engineering services, we recognize revenue in accordance with the provisions of the proportional performance method. We determine costs associated with engineering services using actual labor dollars incurred and estimated other direct or incremental costs allocated based on the percentage of time the engineer(s) spent on the project. These costs are deferred until revenue recognition criteria have been met, at which time they are reclassified as cost of revenue.

#### Warranty Program

We warrant that our products will be free from defects in material and workmanship for a period of twelve months from delivery. Warranty repairs are guaranteed for the remainder of the original warranty period. Our warranty is limited to repairing or replacing products, or refunding the purchase price. At the end of each reporting period, we estimate a reserve for warranty returns based on historical experience and knowledge of any applicable events or transactions. The reserve for warranty returns is included in accrued liabilities in our consolidated balance sheets.

#### Stock-Based Compensation

We currently sponsor a stock incentive plan that allows for issuance of employee stock options and restricted stock awards, including restricted stock units. We also have an employee stock purchase plan for all eligible employees. The fair value of share-based payment awards is expensed straight-line over the requisite service period, which is generally the vesting period, for the entire award. Additionally, any modification of an award that increases its fair value will require us to recognize additional expense.

The fair value of our stock option grants and purchase rights under our employee stock purchase plan are estimated as of the grant date using the Black-Scholes option pricing model which is affected by our estimates of the risk free interest rate, our expected dividend yield, expected term and the expected share price volatility of our common shares over the expected term. The fair values of our restricted stock awards are based on the market value of our stock on the date of grant, adjusted for the effect of estimated forfeitures.

#### Research and Development

Costs associated with research and development activities are expensed as incurred, except for items with alternate future uses which are capitalized and depreciated over their estimated useful life.

On occasion, we enter into co-development arrangements with current or prospective integrated circuit ("IC") customers to defray a portion of the research and development expenses we expect to incur in connection with our development of an IC product. As amounts become due and payable without recourse under co-development agreements, they are offset against research and development expense up to the amount of related costs incurred.

#### Income Taxes

We account for income taxes under the asset and liability method. This approach requires the recognition of deferred tax assets and liabilities for the expected future tax consequences of temporary differences between financial statement carrying amounts and tax bases of assets and liabilities. 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 effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date. We establish a valuation allowance to reduce deferred tax assets if it is "more likely than not" that a portion or all of the asset will not be realized in future tax returns.



An uncertain tax position represents our expected treatment of a tax position taken in a filed tax return, or planned to be taken in a future tax return, that has not been reflected in measuring income tax expense for financial reporting purposes. Until these positions are sustained by the taxing authorities, we do not recognize the tax benefits resulting from such positions and report the tax effects for uncertain tax positions in our consolidated balance sheets.

#### Accumulated Other Comprehensive Income

Accumulated other comprehensive income, net of tax, consists of the following:

	December 31,	
	2015	2014
Actuarial income on foreign pension obligation	\$28	\$38
Accumulated transition foreign pension obligation	(22	) (27
Accumulated other comprehensive income	\$6	\$11

#### Fair Value of Financial Instruments

See "Note 4: Fair Value Measurements" for information regarding accounting policies related to the fair value of our financial instruments.

#### Risks and Uncertainties

##### Concentration of Suppliers

We do not own or operate a semiconductor fabrication facility and do not have the resources to manufacture our products internally. We rely on a limited number of foundries and assembly and test vendors to produce all of our wafers and for completion of finished products. We do not have any long-term agreements with any of these suppliers. In light of these dependencies, it is reasonably possible that failure to perform by one of these suppliers could have a severe impact on our results of operations. Additionally, the concentration of these vendors within Taiwan, the People's Republic of China and Singapore increases our risk of supply disruption due to natural disasters, economic instability, political unrest or other regional disturbances.

##### Risk of Technological Change

The markets in which we compete, or seek to compete, are subject to rapid technological change, frequent new product introductions, changing customer requirements for new products and features, and evolving industry standards. The introduction of new technologies and the emergence of new industry standards could render our products less desirable or obsolete, which could harm our business.

##### Concentrations of Credit Risk

Financial instruments that potentially subject us to concentrations of credit risk consist of cash equivalents and accounts receivable. We limit our exposure to credit risk associated with cash equivalent balances by holding our funds in high quality, highly liquid money market accounts. We limit our exposure to credit risk associated with accounts receivable by carefully evaluating creditworthiness before offering terms to customers.

##### Recent Accounting Pronouncements

In February 2016, the Financial Accounting Standards Board (the "FASB") issued Accounting Standards Update No. 2016-02, Leases (Topic 842) ("ASU 2016-02"). ASU 2016-02 is effective for fiscal years, and interim periods within those years, beginning after December 15, 2018. ASU 2016-02 requires a dual approach for lessee accounting under which a lessee would account for leases as finance leases or operating leases. Both finance leases and operating leases will result in the lessee recognizing a right-of-use (ROU) asset and a corresponding lease liability. For finance leases the lessee would recognize interest expense and amortization of the ROU asset and for operating leases the lessee would recognize a straight-line total lease expense. The Company is evaluating effects of the adoption of this update on its financial position, results of operations and cash flows.

In November 2015, the FASB issued Accounting Standards Update No. 2015-17, Balance Sheet Classification of Deferred Taxes ("ASU 2015-17"), which requires all deferred tax assets and liabilities, and any related valuation allowance, to be classified as non-current on the balance sheet. The classification change for all deferred taxes as non-current simplifies entities' processes as it eliminates the need to separately identify the net current and net non-current deferred tax asset or liability in each jurisdiction and allocate valuation allowances. We elected to prospectively adopt the accounting standard in the beginning of our fourth quarter of fiscal 2015. Prior periods in our consolidated balance sheets were not retrospectively adjusted.

In July 2015, the FASB issued Accounting Standards Update No. 2015-11, Simplifying the Measurement of Inventory ("ASU 2015-11"), which changes the measurement principle for inventory from the lower of cost or market to the lower of cost and net realizable value. ASU 2015-11 defines net realizable value as estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal, and transportation. ASU 2015-11 is effective prospectively and is effective for the Company on January 1, 2017, with early adoption permitted. We do not expect the adoption of this accounting standard update to impact our financial position, results of operations, or cash flows.

In May 2014, the FASB issued Accounting Standards Update No. 2014-09, Revenue from Contracts with Customers ("ASU 2014-09"), which requires that an entity recognize revenue when it transfers promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2014-09 will replace most existing revenue recognition guidance in U.S. GAAP when it becomes effective. ASU 2014-09 allows for either full retrospective or modified retrospective adoption and will become effective for the Company on January 1, 2018. The Company is evaluating the alternative transition methods and the potential effects of the adoption of this update on its financial position, results of operations and cash flows.

### NOTE 3. BALANCE SHEET COMPONENTS

Accounts Receivable, Net

Accounts receivable consists of the following:

	December 31,	
	2015	2014
Accounts receivable, gross	\$6,048	\$4,949
Allowance for doubtful accounts	(60	) (301
Accounts receivable, net	\$5,988	\$4,648

The following is a summary of the change in our allowance for doubtful accounts:

	Year Ended December 31,		
	2015	2014	2013
Balance at beginning of year	\$301	\$315	\$352
Additions charged	9	2	10
Accounts written-off, net of recoveries	(250	) (16	) (47
Balance at end of year	\$60	\$301	\$315

Inventories

Inventories consist of the following:

	December 31,	
	2015	2014
Finished goods	\$2,174	\$1,697
Work-in-process	1,092	1,201
Inventories	\$3,266	\$2,898

We recorded inventory write-downs of \$199, \$267 and \$24 for the years ended December 31, 2015, 2014 and 2013, respectively. The inventory write-downs were for lower of cost or market and excess and obsolescence exposure, net of sales of previously reserved inventory of \$8, \$56 and \$66 for the years ended December 31, 2015, 2014 and 2013, respectively.



**Prepaid Expenses and Other Current Assets**

Prepaid expenses and other current assets consist of current prepaid expenses, deposits, income taxes receivable and other receivables. We prospectively adopted ASU 2015-17 during the fourth quarter of 2015, therefore, deferred tax assets are included in the December 31, 2014 balance but are not included in the December 31, 2015 balance.

**Property and Equipment, Net**

Property and equipment consists of the following:

	December 31,	
	2015	2014
Software	\$8,226	\$11,883
Equipment, furniture and fixtures	9,847	9,171
Tooling	5,810	4,282
Leasehold improvements	2,337	2,237
	26,220	27,573
Accumulated depreciation and amortization	(19,677	) (21,171
Property and equipment, net	\$6,543	\$6,402

Software amortization was \$2,127, \$2,282 and \$2,426 for the years ended December 31, 2015, 2014 and 2013, respectively. Depreciation and amortization expense for equipment, furniture, fixtures, tooling and leasehold improvements was \$1,483, \$1,293 and \$1,590 for the years ended December 31, 2015, 2014 and 2013, respectively.

**Other Assets, Net**

Other assets consist primarily of licensed technology, deposits and deferred tax assets. Amortization of licensed technology was \$653, \$939 and \$393 for the years ended December 31, 2015, 2014 and 2013, respectively.

**Accrued Liabilities and Current Portion of Long-Term Liabilities**

Accrued liabilities and current portion of long-term liabilities consist of the following:

	December 31,	
	2015	2014
Accrued payroll and related liabilities	\$2,419	\$2,385
Accrued commissions and royalties	2,220	2,055
Accrued interest payable	1,754	1,383
Current portion of accrued liabilities for asset financings	1,241	1,744
Reserve for warranty returns	49	105
Other	845	867
Accrued liabilities and current portion of long-term liabilities	\$8,528	\$8,539

The following is a summary of the change in our reserve for warranty returns:

	Year Ended December 31,		
	2015	2014	2013
Reserve for warranty returns:			
Balance at beginning of year	\$105	\$329	\$457
Provision (benefit)	(24	) (195	) 84
Charge-offs	(32	) (29	) (212
Balance at end of year	\$49	\$105	\$329

### Short-Term Line of Credit

On December 21, 2010, we entered into a Loan and Security Agreement (the "Revolving Loan Agreement") with Silicon Valley Bank (the "Bank"). On December 14, 2012, we and the Bank entered into Amendment No. 1 (the "Amendment No. 1") to the Revolving Loan Agreement. The Revolving Loan Agreement, as amended, provides a secured working capital-based revolving line of credit (the "Revolving Line") in an aggregate amount of up to the lesser of (i) \$10,000, or (ii) \$1,000 plus 80% of eligible domestic accounts receivable and certain foreign accounts receivable. On December 4, 2013, we and the Bank entered into Amendment No. 2 (the "Amendment No. 2") to the Revolving Loan Agreement which changes the maturity date of the revolving line of credit provided pursuant to the Revolving Loan Agreement to January 1, 2016. The maturity date was previously December 14, 2014, as provided by Amendment No. 1 to the Revolving Loan Agreement. On December 18, 2015, we and the Bank entered into Amendment No. 3 to the Revolving Loan Agreement which changes the maturity date of the revolving line of credit provided pursuant to the Revolving Loan Agreement to December 30, 2016. The maturity date was previously January 1, 2016, as provided by Amendment No. 2 to the Revolving Loan Agreement. In addition, the Revolving Loan Agreement, as amended, provides for non-formula advances of up to \$10,000 which may be made solely during the last five business days of any fiscal month or quarter and which must be repaid by the Company on or before the fifth business day after the applicable fiscal month or quarter end.

Amounts advanced under the Revolving Line bear interest at an annual rate equal to the lender's prime rate plus 0.25%. The Revolving Loan Agreement, as amended also provides an option for LIBOR advances that bear interest based on the LIBOR rate. Interest on the Revolving Line is due monthly, with the balance due on December 30, 2016, which is the scheduled maturity date for the Revolving Line.

The Revolving Loan Agreement, as amended contains customary affirmative and negative covenants, including with respect to the following: compliance with laws, provision of financial statements and periodic reports, payment of taxes, maintenance of inventory and insurance, maintenance of operating accounts at the Bank, the Bank's access to collateral, formation or acquisition of subsidiaries, incurrence of indebtedness, dispositions of assets, granting liens, changes in business, ownership or business locations, engaging in mergers and acquisitions, making investments or distributions and affiliate transactions. The covenants also require that the Company maintain a minimum ratio of qualifying financial assets to the sum of qualifying financial obligations.

The Revolving Loan Agreement, as amended also contains customary events of default, including the following: defaults with respect to covenant compliance, the occurrence of a material adverse change, the occurrence of certain bankruptcy or insolvency events, cross-defaults, judgment defaults and material misrepresentations. The occurrence of an event of default could result in the acceleration of the Company's obligations under the Revolving Loan Agreement, as amended and an increase to the applicable interest rate, and would permit the Bank to exercise remedies with respect to its security interest.

To secure the repayment of any amounts borrowed under the Revolving Loan Agreement, as amended, the Company granted to the Bank a security interest in substantially all of its assets, excluding its intellectual property assets. The Company has agreed not to pledge or otherwise encumber its intellectual property assets without prior written permission from the Bank.

Short-term borrowings outstanding under the Revolving Line consisted of non-formula advances of \$3,000 as of December 31, 2015 and as of December 31, 2014, both advances were repaid within required terms. The weighted-average interest rate on short-term borrowings outstanding as of December 31, 2015 and December 31, 2014 was 3.75% and 3.50%, respectively.



**NOTE 4. FAIR VALUE MEASUREMENTS**

Fair value is defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. Three levels of inputs may be used to measure fair value:

Level 1: Valuations based on quoted prices in active markets for identical assets and liabilities.

Level 2: Valuations based on inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.

Level 3: Valuations based on unobservable inputs in which there is little or no market data available, which require the reporting entity to develop its own assumptions.

The following table presents information about our assets measured at fair value on a recurring basis in the consolidated balance sheets as of December 31, 2015 and 2014:

	Level 1	Level 2	Level 3	Total
As of December 31, 2015:				
Money market funds	\$25,343	\$—	\$—	\$25,343
As of December 31, 2014:				
Money market funds	\$17,480	\$—	\$—	\$17,480

We primarily use the market approach to determine the fair value of our financial assets. The fair value of our current assets and liabilities, including accounts receivable and accounts payable approximates the carrying value due to the short-term nature of these balances. We have currently chosen not to elect the fair value option for any items that are not already required to be measured at fair value in accordance with U.S. GAAP.

**NOTE 5. INCOME TAXES**

Current and Deferred Income Tax Expense

Domestic and foreign pre-tax income (loss) is as follows:

	Year Ended December 31,		
	2015	2014	2013
Domestic	\$(11,675 )	\$(10,858 )	\$(9,705 )
Foreign	1,425	1,416	1,163
Domestic and foreign pre-tax loss	\$(10,250 )	\$(9,442 )	\$(8,542 )

Income tax expense attributable to operations is comprised of the following:

	Year Ended December 31,		
	2015	2014	2013
Current:			
Federal	\$55	\$55	\$55
State	2	—	(17 )
Foreign	240	374	136
Total current	297	429	174
Deferred:			
Foreign	23	89	154
Total deferred	23	89	154
Income tax expense	\$320	\$518	\$328

The reconciliation of the U.S. federal statutory income tax rate to our effective income tax rate is as follows:

	Year Ended December 31,					
	2015		2014		2013	
Federal statutory rate	34	%	34	%	34	%
Expiration of tax attributes	(18	)	(4	)	(38	)
Change in valuation allowance	(17	)	(39	)	8	)
Stock-based compensation	(7	)	(2	)	(6	)
State income taxes, net of federal tax benefit	3		3		2	
Impact of foreign earnings	1		1		2	
Tax contingencies, net of reversals	—		1		(5	)
Other	1		1		(1	)
Effective income tax rate	(3	)%	(5	)%	(4	)%

#### Deferred Tax Assets, Liabilities and Valuation Allowance

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts for income tax purposes. Significant components of our deferred tax assets and liabilities are as follows:

	December 31,		
	2015	2014	
Deferred tax assets:			
Net operating loss carryforwards	\$73,903	\$70,237	
Research and experimentation credit carryforwards	11,688	11,026	
Foreign tax credit carryforwards	3,884	4,049	
Deferred stock-based compensation	2,623	2,794	
Depreciation and amortization	1,800	2,046	
Reserves and accrued expenses	606	740	
Capital loss carryforwards	358	2,212	
Other	490	529	
Total gross deferred tax assets	95,352	93,633	
Deferred tax liabilities:			
Foreign earnings	(376	) (350	)
Other	(317	) (335	)
Total gross deferred tax liabilities	(693	) (685	)
Less valuation allowance	(94,524	) (92,792	)
Net deferred tax assets	\$135	\$156	

With the adoption of ASU 2015-17 in the fourth quarter of 2015, we were required to classify all deferred tax assets and liabilities, and any related valuation allowance, as non-current on the balance sheet. We elected to prospectively adopt the accounting standard in the beginning of our fourth quarter of 2015 and prior periods in the consolidated balance sheets were not retrospectively adjusted. Therefore, the current portion of the net deferred tax asset balance was \$0 and \$133 as of December 31, 2015 and 2014, respectively, and is included in prepaid expenses and other current assets in the consolidated balance sheets. The non-current portion of the net deferred tax asset balance was \$135 and \$27 as of December 31, 2015 and 2014, respectively, and is included in other assets, net in the consolidated balance sheets. Long-term deferred tax liabilities were \$0 and \$4 as of December 31, 2015 and 2014, respectively, and are included in long-term liabilities, net of current portion in the consolidated balance sheets.

We continue to record a full valuation allowance against our U.S. net deferred tax assets as of December 31, 2015 and 2014 as it is not more likely than not that we will realize a benefit from these assets in a future period. We have not provided a valuation allowance against any of our foreign net deferred tax assets as we have concluded it is more likely than not that we will realize a benefit from these assets in a future period because our subsidiaries in these jurisdictions are cost-plus taxpayers. The net valuation allowance increased \$1,732, increased \$3,656 and decreased \$705 for the years ended December 31, 2015, 2014, and 2013, respectively.



As of December 31, 2015, we had federal and state net operating loss carryforwards of \$214,415 and \$16,932 respectively, which will expire between 2016 and 2035. As of December 31, 2015, we had available federal and state research and experimentation tax credit carryforwards of \$8,523 and \$3,639, respectively, which will begin expiring in 2019. We have a general foreign tax credit of \$3,209 which will begin expiring in 2016. Our ability to utilize our federal net operating losses may be limited by Section 382 of the Internal Revenue Code of 1986, as amended, which imposes an annual limit on the ability of a corporation that undergoes an "ownership change" to use its net operating loss carryforwards to reduce its tax liability. An ownership change is generally defined as a greater than 50% point increase in equity ownership by 5% shareholders in any three-year period.

We had undistributed earnings of foreign subsidiaries of \$2,577 as of December 31, 2015, for which we have recorded a deferred tax liability.

Our Chinese subsidiary is designated as an Advanced Technology Service Enterprise, allowing it to benefit from a Chinese tax holiday resulting in a reduction of its tax rate to 15% through 2018.

On December 18, 2015, the Protecting Americans From Tax Hikes Act of 2015 was enacted, which permanently extended the research and development tax credit retroactively, beginning on January 1, 2015. The estimated research credit for 2015 has been included in our annual effective tax rate.

On December 19, 2014, the Tax Increase Prevention Act of 2014 was enacted, which retroactively extended the research credit from January 1, 2014 to December 31, 2014. The estimated research credit for 2014 has been included in the calculation of our annual effective tax rate.

The American Taxpayer Relief Act of 2012, which reinstated the United States federal research and development tax credit retroactively from January 1, 2012 through December 31, 2013, was not enacted into law until the first quarter of 2013. Therefore, the deferred tax asset resulting from such reinstatement for 2012 was reflected in 2013.

#### Uncertain Tax Positions

We have recorded tax reserves to address potential exposures involving positions that could be challenged by taxing authorities. As of December 31, 2015 the amount of our uncertain tax positions was a liability of \$1,519 and a reduction to deferred tax assets of \$473. As of December 31, 2014, the amount of our uncertain tax positions was a liability of \$1,712 and a reduction to deferred tax assets of \$160.

The following is a summary of the change in our liability for uncertain tax positions and interest and penalties:

	2015	2014
Uncertain tax positions:		
Balance at beginning of year	\$1,646	\$1,592
Accrual for positions taken in a prior year	135	(21)
Accrual for positions taken in current year	299	249
Reversals due to lapse of statute of limitations	(217)	(174)
Balance at end of year	\$1,863	\$1,646
Interest and penalties:		
Balance at beginning of year	\$226	\$305
Accrual for positions taken in prior year	9	17
Reversals due to lapse of statute of limitations	(106)	(96)
Balance at end of year	\$129	\$226

During the years ended December 31, 2015, 2014 and 2013, we recognized \$9, \$17 and \$27, respectively, of interest and penalties in income tax expense in our consolidated statements of operations.

We file income tax returns in the U.S. and various foreign jurisdictions. A number of years may elapse before an uncertain tax position is resolved by settlement or statute of limitations. Settlement of any particular position could require the use of cash. If the uncertain tax positions we have accrued for are sustained by the taxing authorities in our favor, the reduction of the liability will reduce our effective tax rate. We reasonably expect reductions in the liability for unrecognized tax benefits and interest and penalties of approximately \$170 within the next twelve months due to the expiration of statutes of limitation in foreign jurisdictions.



We are no longer subject to U.S. federal, state, and foreign examinations for years before 2012, 2011 and 2008, respectively. Our net operating loss and tax credit carryforwards from all years may be subject to adjustment for three years following the year in which utilized. We do not anticipate that any potential tax adjustments will have a significant impact on our financial position or results of operations.

We were not subject to, nor have we received any notice of, income tax examinations in any jurisdiction as of December 31, 2015. During 2014, we were under examination in Japan for the tax years 2011 through 2013. The tax examination was finalized during 2015 and did not result in a material impact on the Company's financial position, results of operations or cash flows.

#### NOTE 6. COMMITMENTS AND CONTINGENCIES

##### Royalties

We license technology from third parties and have agreed to pay certain suppliers a royalty based on the number of chips sold or manufactured, the net sales price of the chips containing the licensed technology or a fixed non-cancelable fee. Royalty expense is recognized based on our estimated average unit cost for royalty contracts with non-cancelable prepayments and the stated contractual per unit rate for all other agreements. Royalty expense was \$826, \$977 and \$1,094 for the years ended December 31, 2015, 2014 and 2013, respectively, which is included in cost of revenue in our consolidated statements of operations.

##### 401(k) Plan

We sponsor a 401(k) plan for eligible employees. Participants may defer a percentage of their annual compensation on a pre-tax basis, not to exceed the dollar limit that is set by law. A discretionary matching contribution by the Company is allowed and is equal to a uniform percentage of the amount of salary reduction elected to be deferred, which percentage will be determined each year by the Company. We made no contributions to the 401(k) plan during the years ended December 31, 2015, 2014 or 2013.

##### Leases

We acquire rights to use certain software engineer design tools under software licenses, accounting for such arrangements is similar to capital leases.

Our various office space and equipment leases are classified as operating leases. Certain of our leases for office space contain provisions under which monthly rent escalates over time and certain leases also contain provisions for reimbursement of a specified amount of leasehold improvements. When lease agreements contain escalating rent clauses, we recognize rent expense on a straight-line basis over the term of the lease. When lease agreements provide allowances for leasehold improvements, we capitalize the leasehold improvement assets and amortize them on a straight-line basis over the lesser of the lease term or the estimated useful life of the asset, and reduce rent expense on a straight-line basis over the term of the lease by the amount of the asset capitalized. When lease agreements provide rent holidays, we reduce rent expense on a straight-line basis over the term of the lease by the amount of the rent holiday.

As of December 31, 2015, future minimum payments under non-cancelable software licenses and operating lease agreements are as follows:

Year Ending December 31,	Software licenses	Operating leases	Total
2016	\$1,348	\$1,735	\$3,083
2017	563	1,203	1,766
2018	—	577	577
	1,911	\$3,515	\$5,426
Less: Interest component	(155	)	
Present value of minimum software license payments	1,756		
Less: Current portion	(1,241	)	
Long-term portion of obligations	\$515		

Rent expense for the years ended December 31, 2015, 2014 and 2013 was \$1,735, \$1,740 and \$1,822, respectively.

**Contract Manufacturers**

In the normal course of business, we commit to purchase products from our contract manufacturers to be delivered within the next 90 days. In certain situations, should we cancel an order, we could be required to pay cancellation fees. Such obligations could impact our immediate results of operations but would not materially affect our business.

**Indemnifications**

Certain of our agreements include limited indemnification provisions for claims from third-parties relating to our intellectual property. It is not possible for us to predict the maximum potential amount of future payments or indemnification costs under these or similar agreements due to the conditional nature of our obligations and the unique facts and circumstances involved in each particular agreement. We have not made any payments under these agreements in the past, and as of December 31, 2015, we have not incurred any material liabilities arising from these indemnification obligations. In the future, however, such obligations could immediately impact our results of operations but are not expected to materially affect our business.

**Legal Proceedings**

We are subject to legal matters that arise from time to time in the ordinary course of our business. Although we currently believe that resolving such matters, individually or in the aggregate, will not have a material adverse effect on our financial position, our results of operations, or our cash flows, these matters are subject to inherent uncertainties and our view of these matters may change in the future.

**NOTE 7. EARNINGS PER SHARE**

Basic earnings per share amounts are computed based on the weighted average number of common shares outstanding. Diluted weighted average shares outstanding include the weighted average number of common shares outstanding plus potentially dilutive common shares outstanding during the period.

The following schedule reconciles the computation of basic and diluted net loss per share (in thousands, except per share data):

	Year Ended December 31,		
	2015	2014	2013
Net loss	\$(10,570	) \$(9,960	) \$(8,870
Weighted average shares outstanding - basic and diluted	25,088	22,766	19,816
Net loss per share - basic and diluted	\$(0.42	) \$(0.44	) \$(0.45

The following weighted average shares were excluded from the calculation of diluted net loss per share as their effect would have been anti-dilutive (in thousands):

	Year Ended December 31,		
	2015	2014	2013
Employee equity incentive plans	4,248	4,346	4,338

Potentially dilutive common shares from employee equity incentive plans are determined by applying the treasury stock method to the assumed exercise of outstanding stock options, the assumed vesting of outstanding restricted stock units, and the assumed issuance of common stock under the stock purchase plan.

**NOTE 8. SHAREHOLDERS' EQUITY****Preferred Stock**

The Company is authorized to issue 50,000,000 shares of preferred stock with a par value of \$0.001 per share. The Board of Directors is authorized to fix or alter the rights, preferences, privileges and restrictions granted to, or imposed on, each series of preferred stock. There were no shares of preferred stock issued as of December 31, 2015 and 2014.

**Common Stock**

The Company is authorized to issue 250,000,000 shares of common stock with a par value of \$0.001 per share. Shareholders of common stock have unlimited voting rights and are entitled to receive the net assets of the Company upon dissolution, subject to the rights of the preferred shareholders, if any.





### Equity Offering

On August 12, 2015, we completed the sale of 3,737,500 shares of common stock, in an underwritten registered offering at a price to the public of \$4.75 per share. Net proceeds to the Company, after deducting underwriting discounts and commissions and other expenses payable by us were approximately \$16,356.

On August 21, 2013, we completed the sale of 3,024,500 shares of common stock, in an underwritten registered offering at a price to the public of \$3.50 per share. Net proceeds to the Company, after deducting underwriting discounts, commissions, and other expenses, were approximately \$9,625.

### Employee Equity Incentive Plans

On May 23, 2006, our shareholders approved the adoption of the Pixelworks, Inc. 2006 Stock Incentive Plan (the "2006 Plan"). Our shareholders approved increases to the total authorized shares of 2,000,000, 1,000,000, 1,000,000, 1,000,000, 1,000,000, 1,150,000, and 1,000,000 on May 13, 2015, May 15, 2014, May 9, 2013, May 15, 2012, May 18, 2010, May 19, 2009, and May 20, 2008, respectively, increasing the total authorized shares available for issuance as equity awards to 9,483,333 shares. The 2006 Plan replaced our previously existing stock incentive plans including our 1997 Stock Incentive Plan, as amended, our 2001 Nonqualified Stock Option Plan, the Equator Technologies, Inc. 1996 Stock Incentive Plan, as amended, and Equator Technologies, Inc. stand-alone option plans (collectively, "Old Stock Incentive Plans"). Upon adoption of the 2006 Plan, no additional options could be issued under the Old Stock Incentive Plans, although awards previously granted under the Old Stock Incentive Plans remain outstanding according to their original terms. As of December 31, 2015, 1,556,278 shares were available for grant under the 2006 Plan.

### Stock Options

Options granted must generally be exercised while the individual is an employee. In May 2009, the 2006 Plan was modified to reduce the contractual life of newly issued stock awards from ten to six years. Our new hire vesting schedule provides that each option becomes exercisable at a rate of 25% on the first anniversary date of the grant and 2.083% on the last day of every month thereafter for a total of 36 additional increments. Our merit vesting schedule provides that merit-type awards become exercisable monthly over a period of three years.

The following is a summary of stock option activity:

	Number of shares	Weighted average exercise price
Options outstanding as of December 31, 2014:	3,335,574	\$3.34
Granted	21,000	5.12
Exercised	(220,236)	2.91
Canceled and forfeited	(4,375)	5.81
Expired	(74,843)	19.82
Options outstanding as of December 31, 2015:	3,057,120	\$2.98

The following table summarizes information about options outstanding as of December 31, 2015:

Range of exercise prices	Options Outstanding		Options Exercisable		
	Number outstanding as of December 31, 2015	Weighted average remaining contractual life	Weighted average exercise price	Number exercisable as of December 31, 2015	Weighted average exercise price
\$0.60 - \$2.01	684,042	2.71	\$0.87	684,042	\$0.87
2.08 - 2.36	717,023	2.09	2.33	709,587	2.33
2.37 - 3.15	718,811	1.48	3.08	668,581	3.07
3.21 - 4.44	620,797	1.14	3.51	610,215	3.50
4.52 - 15.51	316,447	1.58	7.71	271,575	8.07
\$0.60 - \$15.51	3,057,120	1.84	\$2.98	2,944,000	\$2.93



During the years ended December 31, 2015, 2014 and 2013 the total intrinsic value of options exercised was \$440, \$979 and \$112, respectively, for which no income tax benefit has been recorded because a full valuation allowance has been provided for our U.S. deferred tax assets. As of December 31, 2015, options outstanding had a total intrinsic value of \$1,068.

Options outstanding that have vested and are expected to vest as of December 31, 2015 are as follows:

	Number of shares	Weighted average exercise price	Weighted average remaining contractual term	Aggregate intrinsic value
Vested	2,944,000	\$2.93	1.77	\$1,067
Expected to vest	105,188	4.03	3.51	1
Total	3,049,188	\$2.97	1.83	\$1,068

#### Restricted Stock

The 2006 Plan provides for the issuance of restricted stock, including restricted stock units. During the years ended December 31, 2015, 2014 and 2013 we granted 530,735, 737,797, and 1,030,673 shares, respectively, of restricted stock with a weighted average grant date fair value of \$4.31, \$6.94, and \$3.95 per share, respectively.

The following is a summary of restricted stock activity:

	Number of shares	Weighted average grant date fair value
Unvested at December 31, 2014:	927,496	\$6.40
Granted	530,735	4.31
Vested	(511,977)	) 5.66
Canceled	(27,578)	) 5.89
Unvested at December 31, 2015:	918,676	\$5.62
Expected to vest after December 31, 2015 <sup>(1)</sup>	679,473	\$5.65

<sup>(1)</sup> As discussed in "Note 11: Subsequent Events", on February 1, 2016, Bruce Walicek resigned from his position as Chief Executive Officer. As a result, we have adjusted the number of shares expected to vest after December 31, 2015 to reflect any restricted stock units that were forfeited by Mr. Walicek in connection with his resignation.

#### Employee Stock Purchase Plans

On May 18, 2010, our shareholders approved the adoption of the 2010 Pixelworks, Inc. Employee Stock Purchase Plan (the "ESPP") for U.S. employees and for certain foreign subsidiary employees. The ESPP provides for separate offering periods commencing on February 1 and August 1, with the first offering period beginning August 1, 2010. Each offering period continues for a period of 18 months with purchases every six months. Each eligible employee may purchase up to 3,000 shares of stock on each purchase date, with a maximum annual purchase amount of \$25. The purchase price is equal to 85% of the lesser of the fair market value of the shares on the offering date or on the purchase date. A total of 1,300,000 shares of common stock have been reserved for issuance under the ESPP. During the years ended December 31, 2015, 2014 and 2013, we issued 92,899, 101,201 and 101,068 shares, respectively for proceeds of \$352, \$274 and \$198, respectively, under the ESPP.

## Stock-Based Compensation Expense

The fair value of stock-based compensation was determined using the Black-Scholes option pricing model and the following weighted average assumptions:

	Year Ended December 31,			
	2015	2014	2013	
<b>Stock Option Plans:</b>				
Risk free interest rate	1.52	% 1.64	% 1.08	%
Expected dividend yield	0	% 0	% 0	%
Expected term (in years)	5.00	5.00	4.93	
Volatility	68	% 73	% 82	%
<b>Employee Stock Purchase Plan:</b>				
Risk free interest rate	0.28	% 0.22	% 0.19	%
Expected dividend yield	0	% 0	% 0	%
Expected term (in years)	1.10	1.02	1.03	
Volatility	89	% 82	% 62	%

The weighted average fair value of options granted during the years ended December 31, 2015, 2014 and 2013 was \$2.93, \$3.50 and \$1.96, respectively. The risk free interest rate is estimated using an average of treasury bill interest rates. The expected dividend yield is zero as we have not paid any dividends to date and do not expect to pay dividends in the future. Expected volatility is estimated based on the historical volatility of our common stock over the expected term as this represents our best estimate of future volatility. Subsequent to the May 2009 amendment of our 2006 Stock Incentive Plan, which shortened the contractual life of newly issued stock options from ten to six years, we have elected to use the "simplified method" to estimate expected term. Under the simplified method, an option's expected term is calculated as the average of its vesting period and original contractual life. The expected term of ESPP purchase rights is based on the estimated weighted average time to purchase.

As of December 31, 2015, unrecognized stock-based compensation expense is \$2,418, which is expected to be recognized as stock-based compensation expense over a weighted average period of 1.54 years.

## NOTE 9. SEGMENT INFORMATION

We have identified a single operating segment: the design and development of ICs for use in electronic display devices. Substantially all of our assets are located in the U.S.

## Geographic Information

Revenue by geographic region, was as follows:

	Year Ended December 31,		
	2015	2014	2013
Japan	\$50,436	\$36,062	\$19,824
Taiwan	5,909	8,266	7,337
Korea	942	3,256	3,241
China	765	5,761	6,329
Europe	611	2,609	1,515
U.S.	167	3,656	8,407
Other	687	1,313	1,465
	\$59,517	\$60,923	\$48,118

## Significant Customers

The percentage of revenue attributable to our distributors, top five end customers, and individual distributors or end customers that represented more than 10% of revenue in at least one of the periods presented, is as follows:

	Year Ended December 31,			
	2015	2014	2013	
Distributors:				
All distributors	48	% 63	% 65	%
Distributor A	31	% 29	% 31	%
Distributor B	1	% 9	% 10	%
End Customers: <sup>(1)</sup>				
Top five end customers	83	% 60	% 57	%
End customer A	47	% 22	% 3	%
End customer B	13	% 13	% 12	%
End customer C	8	% 10	% 12	%
End customer D	—	% 4	% 17	%

<sup>(1)</sup> End customers include customers who purchase directly from us, as well as customers who purchase our products indirectly through distributors.

Each of the following accounts represented 10% or more of total accounts receivable in at least one of the periods presented:

	December 31,		
	2015	2014	
Account X	49	% 37	%
Account Y	34	% 15	%
Account Z	1	% 16	%

## NOTE 10. QUARTERLY FINANCIAL DATA (UNAUDITED)

	Quarterly Period Ended			
	March 31	June 30	September 30	December 31
2015				
Revenue, net	\$14,392	\$15,078	\$16,570	\$13,477
Gross profit	6,967	7,234	8,278	6,814
Loss from operations	(3,238)	(2,455)	(1,201)	(2,910)
Loss before income taxes	(3,345)	(2,560)	(1,306)	(3,039)
Net loss	(3,364)	(2,796)	(1,243)	(3,167)
Net loss per share - basic and diluted	(0.14)	(0.12)	(0.05)	(0.11)
2014				
Revenue, net	\$13,541	\$15,166	\$17,111	\$15,105
Gross profit	7,995	7,661	8,566	7,559
Loss from operations	(2,439)	(1,935)	(1,968)	(2,607)
Loss before income taxes	(2,561)	(2,065)	(2,091)	(2,725)
Net loss	(2,507)	(2,382)	(2,300)	(2,771)
Net loss per share - basic and diluted	(0.11)	(0.11)	(0.10)	(0.12)

## NOTE 11. SUBSEQUENT EVENTS

Effective February 1, 2016, Bruce Walicek resigned from his positions as Chief Executive Officer and a member of the Board of Directors of Pixelworks, Inc. Effective February 1, 2016, Stephen Domenik, a director of Pixelworks, Inc., was appointed as Interim Chief Executive Officer of Pixelworks, Inc.

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

None.

## Item 9A. Controls and Procedures.

## Disclosure Controls and Procedures

As of the end of the period covered by this report, we conducted an evaluation under the supervision and with the participation of our Chief Executive Officer (our Principal Executive Officer) and Chief Financial Officer (our Principal Accounting and Financial Officer) of our disclosure controls and procedures (as defined in Rule 13a-15(e) and Rule 15d-15(f) of the Securities Exchange Act of 1934, as amended (the "Exchange Act")). Based on this evaluation, the Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2015 our disclosure controls and procedures were effective to ensure that information required to be disclosed in our periodic reports filed or submitted under the Securities Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms, and (ii) accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding disclosure.

Our management, including our Chief Executive Officer and Chief Financial Officer, does not expect that our disclosure controls and procedures will prevent or detect all errors and all fraud. Disclosure controls and procedures, no matter how well designed, operated and managed, can provide only reasonable assurance that the objectives of the disclosure controls and procedures are met. Because of the inherent limitations of disclosure controls and procedures, no evaluation of such disclosure controls and procedures can provide absolute assurance that all control issues and instances of fraud, if any, have been detected.

#### Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining a system of internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles ("U.S. GAAP"). All internal control systems, no matter how well designed, have inherent limitations.

We conducted an assessment of the effectiveness of our system of internal control over financial reporting as of December 31, 2015, the last day of our fiscal year. This assessment was based on criteria established in the framework Internal Control—Integrated Framework (2013), issued by the Committee of Sponsoring Organizations of the Treadway Commission and included an evaluation of elements such as the design and operating effectiveness of key financial reporting controls, process documentation, accounting policies, and our overall control environment. Based on our assessment, management has concluded that our internal control over financial reporting was effective as of the end of the fiscal year to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external reporting purposes in accordance with U.S. GAAP. We reviewed the results of management's assessment with the Audit Committee of our Board of Directors.

The effectiveness of our internal control over financial reporting as of December 31, 2015 has been audited by KPMG LLP, our independent registered public accounting firm, as stated in their report, which is presented below.

#### Changes in Internal Control Over Financial Reporting

There were no changes to our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the fourth quarter of 2015 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders

Pixelworks, Inc.:

We have audited Pixelworks, Inc.'s (the "Company") internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). The Company's management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included performing such other procedures as we considered necessary in the circumstances. We believe that our audit provides a reasonable basis for our opinion.

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

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

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2015, based on criteria established in Internal Control - Integrated Framework (2013) issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Pixelworks, Inc and subsidiaries as of December 31, 2015 and 2014, and the related consolidated statements of operations, comprehensive loss, shareholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2015, and our report dated March 9, 2016 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP  
Portland, Oregon  
March 9, 2016



Item 9B. Other Information.

Not applicable.

PART III

Item 10. Directors, Executive Officers and Corporate Governance.

Information required by Item 10 with respect to our directors and executive officers will be set forth under the captions "Election of Directors - Director Nominees for Election to New Three-Year Terms" and "Election of Directors - Continuing Directors Not Being Considered for Election at this Annual Meeting" and "Information about our Executive Officers" in our Proxy Statement for our 2016 Annual Meeting of Shareholders (the "2016 Proxy Statement") to be filed within 120 days after December 31, 2015 and pursuant to Regulation 14A and is incorporated herein by reference.

Item 405 of Regulation S-K calls for disclosure of any known late filing or failure by an insider to file a report required by Section 16(a) of the Securities Exchange Act of 1934, as amended (the "Exchange Act"). This information is incorporated by reference from the Section called "Section 16(a) Beneficial Ownership Reporting Compliance" in the 2016 Proxy Statement.

We have adopted a Code of Business Conduct and Ethics that applies to all directors and employees, including the Chief Executive Officer (our Principal Executive Officer) and our Chief Financial Officer (our Principal Accounting and Financial Officer). We have also adopted a Code of Ethics for Senior or Designated Financial Personnel (the "Code of Ethics for Senior or Designated Financial Personnel") that applies to our Chief Executive Officer (our Principal Executive Officer), our Chief Financial Officer (our Principal Accounting and Financial Officer) and other designated financial personnel. The Code of Business Conduct and Ethics and the Code of Ethics for Senior or Designated Financial Personnel are each available on our website free of charge at [www.pixelworks.com](http://www.pixelworks.com). We intend to disclose any changes in or waivers from our Code of Business Conduct and Ethics or Code of Ethics for Senior or Designated Financial Personnel by posting such information on our website at [www.pixelworks.com](http://www.pixelworks.com) or by filing a Current Report on Form 8-K.

We have a separately designated standing audit committee established in accordance with the Securities Exchange Act of 1934. The members of the audit committee are Daniel Heneghan, Chairman, Barry Cox and C. Scott Gibson. The audit committee has the responsibility and authority described in the Pixelworks, Inc. Charter of the Audit Committee of the Board of Directors, which has been approved by our board of directors. A copy of the audit committee charter is available on our website at [www.pixelworks.com](http://www.pixelworks.com). Our board of directors has determined that Mr. Heneghan, Mr. Cox and Mr. Gibson meet the independence requirements set forth in Rule 10A-3(b)(1) under the Exchange Act and in the applicable rules of the NASDAQ. In addition, our board of directors has determined that Mr. Heneghan, Mr. Cox and Mr. Gibson each qualify as an audit committee financial expert as defined by Securities and Exchange Commission rules.

Item 11. Executive Compensation.

Information required by Item 11 with respect to executive compensation will be included under the captions "Compensation Committee Report", "Executive Compensation", "Executive Compensation - Compensation Discussion and Analysis" and "Information About Our Board of Directors - Director Compensation" in our 2016 Proxy Statement and is incorporated herein by reference.

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

Information required by Item 12 with respect to security ownership of certain beneficial owners and management and related stockholder matters will be included under the captions "Security Ownership of Certain Beneficial Owners and Management" and "Information about our Equity Compensation Plans" in our 2016 Proxy Statement and is incorporated herein by reference.

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

Information required by Item 13 with respect to certain relationships and related transactions and director independence will be included under the captions “Certain Relationships and Related Transactions” and “Information About Our Board of Directors” in our 2016 Proxy Statement and is incorporated herein by reference.

Item 14. Principal Accounting Fees and Services.

Information required by Item 14 with respect to principal accounting fees and services will be set forth under the caption “Information About Our Independent Registered Public Accounting Firm” in our 2016 Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) 1. Financial Statements.

The following financial statements are included in Item 8 Financial Statements and Supplementary Data:

Report of Independent Registered Public Accounting Firm

Consolidated Balance Sheets as of December 31, 2015 and 2014

Consolidated Statements of Operations for the years ended December 31, 2015, 2014 and 2013

Consolidated Statements of Comprehensive Loss for the years ended December 31, 2015, 2014 and 2013

Consolidated Statements of Cash Flows for the years ended December 31, 2015, 2014 and 2013

Consolidated Statements of Shareholders' Equity for the years ended December 31, 2015, 2014 and 2013

Notes to Consolidated Financial Statements

(a) 2. Financial Statement Schedules.

All schedules have been omitted because the required information is included in the consolidated financial statements or the notes thereto, or is not applicable or required.

(a) 3. Exhibits.

The exhibits are either filed with this report or incorporated by reference into this report.

Exhibit Number	Description
3.1	Sixth Amended and Restated Articles of Incorporation of Pixelworks, Inc., As Amended by First and Second Amendments thereto (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q filed on August 9, 2004).
3.2	Third Amendment to Sixth Amended and Restated Articles of Incorporation of Pixelworks, Inc. (incorporated by reference to Exhibit 3.1 to the Company's Quarterly Report on Form 10-Q filed on August 11, 2008).
3.3	Second Amended and Restated Bylaws of Pixelworks, Inc. (incorporated by reference to Exhibit 3.3 to the Company's Annual Report on Form 10-K filed March 10, 2010).
4.1	Reference is made to Exhibit 3.1 above (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-1 declared effective May 19, 2000).
10.1	Form of Indemnity Agreement between Pixelworks, Inc. and each of the members of the Board and Steven Moore, the Company's Chief Financial Officer (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on August 2, 2010). +
10.2	Pixelworks, Inc. 1997 Stock Incentive Plan, as amended (incorporated by reference to Exhibit 99.1 to the Company's Registration Statement on Form S-8 filed on June 21, 2005). +
10.3	Pixelworks, Inc. Amended and Restated 2010 Employee Stock Purchase Plan (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on May 12, 2011). +
10.4	Pixelworks, Inc. Amended and Restated 2006 Stock Incentive Plan (incorporated by reference to Exhibit 4.1 to the Company's Registration Statement on Form S-8 filed on July 16, 2012). +



- 10.5 Pixelworks, Inc. Amended and Restated 2006 Stock Incentive Plan, Terms and Conditions of Restricted Stock Awards (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on May 7, 2009). +
- 10.6 Pixelworks, Inc. Amended and Restated 2006 Stock Incentive Plan, Terms and Conditions of Option Grants (incorporated by reference to Exhibit 10.9 to the Company's Annual Report on Form 10-K filed March 8, 2012). +
- 10.7 Pixelworks, Inc. Amended and Restated 2006 Stock Incentive Plan, Terms and Conditions of Director Stock Unit Awards (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed on November 4, 2010). +
- 10.8 Pixelworks, Inc. Amended and Restated 2006 Stock Incentive Plan, Terms and Conditions of Restricted Stock Unit Award. (incorporated by reference to Exhibit 10.8 to the Company's Annual Report on Form 10-K filed on March 4, 2015).+
- 10.9 Summary of Pixelworks Non-Employee Director Compensation. (incorporated by reference to Exhibit 10.9 to the Company's Annual Report on Form 10-K filed on March 4, 2015). +
- 10.10 2012 Executive Employment Agreement dated and effective November 2, 2012, by and between Bruce Walicek and Pixelworks, Inc. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed November 6, 2012).+
- 10.11 Form of Pixelworks, Inc. Senior Management Bonus Plan (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed December 31, 2009). +
- 10.12 Offer letter dated June 22, 2007 between Pixelworks, Inc. and Steven L. Moore (incorporated by reference to Exhibit 10.2 to the Company's Quarterly Report on Form 10-Q filed August 9, 2007). +
- 10.13 Change of Control Severance Agreement dated May 11, 2009 and effective April 1, 2009, by and between Pixelworks, Inc. and Steven L. Moore (incorporated by reference to Exhibit 10.18 to the Company's Annual Report on Form 10-K filed March 10, 2010). +
- 10.14 Amendment to the Amended and restated Change of Control Severance Agreement by and between Pixelworks, Inc. and Steven Moore (incorporated by reference to Exhibit 10.2 to the Company's Current Report on Form 8-K filed on February 24, 2012). +
- 10.15 Employment Agreement with Stephen Domenik dated February 1, 2016 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on February 2, 2016). +
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- 10.17 Separation and Consulting Agreement with Bruce Walicek dated February 1, 2016 (incorporated by reference to Exhibit 10.3 to the Company's Current Report on Form 8-K filed on February 2, 2016). +
- 10.18 Intellectual Property Sublicense Agreement dated March 30, 1999 between VAutomation Incorporated and Pixelworks, Inc. (incorporated by reference to Exhibit 10.9 to the Company's Registration Statement on Form S-1 declared effective May 19, 2000).

- 10.19 License Agreement dated February 22, 2000 between Pixelworks, Inc. and InFocus Systems, Inc. (incorporated by reference to Exhibit 10.10 to the Company's Registration Statement on Form S-1 declared effective May 19, 2000).

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- 10.20 Office Lease Agreement dated December 2005, by and between CA-The Concourse Limited Partnership and Pixelworks, Inc. (incorporated by reference to Exhibit 10.42 to the Company's Annual Report on Form 10-K filed March 13, 2006).
- 10.21 Office Lease Agreement dated September 10, 2008 and commencing December 1, 2008 by and between Pixelworks, Inc. and Durham Plaza, LLC (incorporated by reference to Exhibit 10.3 to the Company's Quarterly Report on Form 10-Q filed on November 7, 2008).
- 10.22 First Amendment to Office Lease Agreement, dated April 16, 2013, by and between CA-The Concourse Limited Partnership and Pixelworks, Inc. (incorporated by reference to Exhibit 10.19 to the Company's Annual Report on Form 10-K filed on March 4, 2015).
- 10.23 First Amendment to Lease, dated July 1, 2013, by and between Durham Plaza, LLC and Pixelworks, Inc. (incorporated by reference to Exhibit 10.20 to the Company's Annual Report on Form 10-K filed on March 4, 2015).
- 10.24 Loan and Security Agreement dated December 21, 2010 by and between Silicon Valley Bank and Pixelworks, Inc. (incorporated by reference to Exhibit 10.26 to the Company's Annual Report on Form 10-K filed March 9, 2011).
- 10.25 Amendment No. 1 dated December 14, 2012 to the Loan and Security Agreement dated December 21, 2010, by and between Silicon Valley Bank and Pixelworks, Inc. (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed December 20, 2012).
- 10.26 Amendment No. 2 dated December 4, 2013 to the Loan and Security Agreement dated December 21, 2010, by and between Silicon Valley Bank and Pixelworks, Inc. (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed December 9, 2013).
- 10.27 Amendment No. 3 dated December 18, 2015 to the Loan and Security Agreement dated December 21, 2010, by and between Silicon Valley Bank and Pixelworks, Inc. (incorporated by reference to Exhibit 10.1 of the Company's Current Report on Form 8-K filed December 22, 2015).
- 10.28 Form of Addendum to Change of Control Agreement for Officers (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on May 23, 2014). +
- 10.29 Advisory Agreement between Pixelworks, Inc. and David J. Tupman dated July 30, 2012 (incorporated by reference to Exhibit 10.1 to the Company's Current Report on Form 8-K filed on April 4, 2014).
- 21 Subsidiaries of Pixelworks, Inc. (incorporated by reference to Exhibit 21 to the Company's Annual Report on Form 10-K filed March 5, 2014).
- 23 Consent of KPMG LLP.
- 31.1 Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350).
- 31.2 Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350).
- 32.1\*

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Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350).

32.2\* Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350).

101.INS XBRL Instance Document

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101.SCH XBRL Taxonomy Extension Schema Document

101.CAL XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF XBRL Taxonomy Extension Definition Linkbase Document

101.LAB XBRL Taxonomy Label Linkbase Document

101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

+ Indicates a management contract or compensation arrangement.

Exhibits 32.1 and 32.2 are being furnished and shall not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liability of that section, nor shall such exhibits be deemed to be incorporated by reference in any registration statement or other document filed under the Securities Act of 1933, as amended, or the Exchange Act, except as otherwise stated in such filing.

(b) Exhibits.

See Item 15 (a) (3) above.

(c) Financial Statement Schedules.

See Item 15 (a) (2) above.

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SIGNATURES

Pursuant to the requirements of Sections 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.

PIXELWORKS, INC.

Dated: March 9, 2016

By: /s/ Stephen L. Domenik  
 Stephen L. Domenik  
 Interim Chief Executive Officer (Principal Executive Officer)

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

Signature	Title	Date
/s/ Stephen L. Domenik Stephen L. Domenik	Interim Chief Executive Officer and Director (Principal Executive Officer)	March 9, 2016
/s/ Steven L. Moore Steven L. Moore	Vice President, Chief Financial Officer, Secretary and Treasurer (Principal Accounting and Financial Officer)	March 9, 2016
/s/ Richard L. Sanquini Richard L. Sanquini	Chairman of the Board	March 9, 2016
/s/ Mark A. Christensen Mark A. Christensen	Director	March 9, 2016
/s/ Barry L. Cox Barry L. Cox	Director	March 9, 2016
/s/ C. Scott Gibson C. Scott Gibson	Director	March 9, 2016
/s/ Daniel J. Heneghan Daniel J. Heneghan	Director	March 9, 2016
/s/ David J. Tupman David J. Tupman	Director	March 9, 2016

EXHIBIT INDEX

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- 32.1\* Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (18 U.S.C. Section 1350).
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- 101.INS XBRL Instance Document
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- 101.CAL XBRL Taxonomy Extension Calculation Linkbase Document
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- 101.LAB XBRL Taxonomy Label Linkbase Document
- 101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

+ Indicates a management contract or compensation arrangement.

\* Exhibits 32.1 and 32.2 are being furnished and shall not be deemed to be "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the "Exchange Act"), or otherwise subject to the liability of that

section, nor shall such exhibits be deemed to be incorporated by reference in any registration statement or other document filed under the Securities Act of 1933, as amended, or the Exchange Act, except as otherwise stated in such filing.



