PIXELWORKS, INC
Form 10-K
March 10, 2010

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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, 2009

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 incorporation or organization)	(I.R.S. Employer Identification No.)

16760 SW Upper Boones Ferry Road, Suite 101	97224	503-601-4545
(Address of principal executive offices)	(Zip Code)	(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 __X__

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 __X__

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 __X__ No _____

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).

Yes _____ 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. _____

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

Large accelerated filer__	Accelerated filer__	Non-accelerated filer__ (Do not check if a smaller reporting company)	Smaller reporting company_X_

Indicate by check mark whether the registrant is a shell company (as defined in Rule 12b-2 of the Act).

Yes _____ No __X__

Aggregate market value of voting Common Stock held by non-affiliates of the registrant at June 30, 2009: $16,207,762. For purposes of this calculation, executive officers and directors are considered affiliates.

Number of shares of Common Stock outstanding as of February 28, 2010: 13,448,320.

Documents Incorporated by Reference

Portions of the registrant s definitive proxy statement relating to its 2010 Annual Meeting of Shareholders, to be filed not later than 120 days after the close of the 2009 fiscal year are incorporated by reference into Part I and Part III of this Annual Report on Form 10-K.

PIXELWORKS, INC.
FORM 10-K
FOR THE YEAR ENDED DECEMBER 31, 2009

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Forward-looking Statements

This Annual Report on Form 10-K, including the 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 certain risks and uncertainties that are difficult to predict. Actual outcomes and results may differ materially from what is expressed or forecasted in such forward-looking statements due to numerous factors. Such factors include, but are not limited to, adverse economic conditions, lack of acceptance of new products, increased competition, failure to design, develop and manufacture new products, lack of success in technological advancements, unexpected changes in the demand for our products and services, the inability to successfully manage inventory pricing pressures, failure to reduce costs or improve operating efficiencies, changes to and compliance with international laws and regulations, currency fluctuations, our ability to attract, hire and retain key and qualified employees, and 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 Company, Pixelworks, we, us and our refer to Pixelworks, Inc., an Oregon corporation, and, where appropriate, its subsidiaries.

PART I

Item 1. Business.

Overview

We are an innovative designer, developer and marketer of video and pixel processing semiconductors and software for high-end digital video applications and hold 119 patents related to the visual display of digital image data. Our solutions enable manufacturers of digital display and projection devices, such as large-screen flat panel displays and digital front projectors, to differentiate their products with a consistently high level of video quality, regardless of the content s source or format. Our core technology leverages unique proprietary techniques for intelligently processing video signals from a variety of sources to ensure that all resulting images are optimized. Additionally, our products help our customers reduce costs and differentiate their display and projection devices, an important factor in industries that experience rapid innovation. Pixelworks was founded in 1997 and is incorporated under the laws of the state of Oregon.

Pixelworks flexible design architecture enables our technology to produce outstanding image quality in our customers products with a range of single-purpose integrated circuits (ICs), to system-on-chip (SoC) ICs that integrate microprocessor, memory and image processing functions. Additionally, we provide full solutions, including a software development environment and operating system, which enable our customers to more quickly develop and customize their display products, thus reducing their time to market and allowing them to incorporate differentiated features and functions.

Our primary target markets are liquid crystal display (LCD) large-screen televisions and digital front projectors, however we also target other segments within the flat panel display market, including digital signage.

We have adopted a product strategy that leverages our core competencies in video processing to address the evolving needs of the advanced flat panel display, digital projection and other markets that require superior image quality. We focus our product investments on developing video enhancement solutions for these markets, with particular focus on adding increased performance and functionality. Additionally, we look for

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ways to leverage our research and development investment into products that address other high-value markets where our innovative proprietary technology provides differentiation for us and our customers. We continually seek to expand our technology portfolio through internal development, co-development with business partners and evaluation of acquisition opportunities.

Digital Video Technology Trends

Over the course of the last several years, video technology has moved rapidly from analog technology, which utilizes waveform signals, to a new generation of digital technologies that utilize a grid of thousands of tiny picture elements, or pixels. Consequently, digital display devices have rapidly evolved to incorporate higher pixel counts and faster rates of screen refresh, both of which contribute to a sharper, clearer image. At the same time, digital display devices have increased in size and begun to incorporate newer video capabilities such as high-definition and, most recently, 3D. Accordingly, the video image processors that drive newer displays have had to increase their capabilities as well to keep pace with the ever growing needs for greater resolution, size and speed that digital technology affords.

The number and variety of digital video applications is increasing rapidly, and video is expanding to play a pervasive role across many aspects of business and personal lifestyle. Digital video content is being delivered from an increasing array of sources that vary dramatically in quality on Blu-ray DVDs, via cable and satellite, across the Internet and on cell phones. The sources and quality of video content range from very high-resolution programming produced by network or movie studios to very poor quality clips created by individuals.

Regardless of the source or quality, increasingly, consumers are sharing video with others and viewing video on an increasing variety of form factors from handheld devices to large screen displays. At the same time, the consumer expectation for ever higher quality video continues to rise, driven by higher display resolutions on larger TVs. These trends place new demands on video signal and pixel processing technology to enable display and projection devices to provide the best viewing experience possible across multiple display formats. For example, content created for one type of display device, such as a PC, must be scaled up or down to play back clearly on a different device, such as a television. On larger, higher-resolution TV screens, image quality deteriorates significantly, and must be compensated for with video processing technology that restores or even creates higher video quality.

The latest generations of advanced digital display devices enhance image performance in a number of ways, chief among them being increasing the size of the display, increasing the display resolution and increasing the number of times per second the image is refreshed. Premium displays currently feature full HD resolutions of 1920 columns by 1080 rows of pixels progressively scanned (1080p), display frame rates of 240Hz or more, are 3D ready and measure from 32 inches or more diagonally. In addition to the need for image enhancement, various applications, such as digital signage, Internet-enabled televisions and connected classroom environments, are creating a need for new networking capabilities that can enable the sharing of video across display devices and display environments.

Large-Screen Flat Panel Display Market

The market for flat panel displays has risen rapidly over the past decade and is projected to be worth more than $100 billion annually by 2012, according to the industry research firm DisplaySearch. Key segments of growth within the flat panel display industry are consumer applications, such as PC monitors and digital televisions. Digital TVs in particular have transformed the flat panel market, as consumers have enthusiastically embraced advanced television displays that offer sharper and more lifelike images on larger and thinner screens. Increasingly, commercial applications such as public-space advertising, a form of digital signage, are also contributing to the growth of the flat panel market and the drive to improve the image and video quality of the panels themselves.

Flat panel display technologies include LCD, plasma display, rear-projection using LCDs, digital micro-mirror, and newer technologies, such as liquid crystal on silicon (LCoS) and organic light emitting diodes (OLED). Within flat panel displays, LCD and plasma have emerged as the preferred digital display

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technologies, with LCD leading the market in growth. The digital TV market has helped to secure the dominance of LCD technology. Shipments of LCD TVs are expected to grow from 86 million units in 2007 to 171 million units in 2010, according to DisplaySearch.

A large consumer market has pressured flat panel manufacturers to continually improve the quality of their displays, and as a result LCDs and other flat panel displays continue to increase in resolution and size. 1080p resolution is now the high-end standard, and larger flat panel displays are shifting rapidly from refresh rates of 50/60Hz to faster rates of 100/120Hz, and even 200/240Hz. The shift to large, high-resolution flat panel displays combined with the transition to 1080p content and 120Hz refresh rates is driving the need for high performance processor solutions to meet the enhanced video quality requirements of next generation display products. As flat panel display resolution and size increase, the challenge of judder becomes more of an issue. Judder occurs when content recorded at one rate of frames per second for film content must be converted to faster video rates, and as a result there is a jerkiness, or judder in the resulting video performance. This problem is intensified in larger displays and can be a problem regardless of the panel technology being used.

In addition to judder, LCD panels also suffer from blur in motion images as a result of the way the human brain processes the longer frame durations produced by an LCD panel. In the past, LCD panel manufacturers have tried to reduce blur by increasing the refresh rate of the panel to higher rates and inserting an extra black frame to reduce frame duration. But the black frame insertion method has had drawbacks one of which was to make LCD screens seem less bright. Newer motion estimation/motion compensation (MEMC) technology uses the insertion of interpolated frames based on complex mathematical algorithms to shorten the duration of the video frame and create a clearer, crisper picture. MEMC also provides de-judder processing that smoothes out the jerkiness often apparent with large screen displays.

Additionally, the increasing trend towards convergence of video and the Internet is presenting new challenges to video processing, as low quality Internet video content increasingly is being displayed on high-end TVs and other devices. Limitations in bandwidth, latency, noise and content resolution create significant challenges for displaying Internet video on large flat panel displays. Video processors must be able to scale poorer quality video, reduce signal noise inherent to networks and enhance image quality in order to ensure optimal video performance.

During 2009, lower sales of flat panel displays due to the global economic recession stimulated the industry to find new strategies, markets and solutions. TV manufacturers therefore accelerated development of design elements and performance features to differentiate products and slow price declines. Among these were the adoption of light emitting diode (LED) backlighting, an emphasis on lower power consumption, and most recently, the development of 3D-enabled TVs. All of these trends are driving the need for high performance processor solutions to meet the enhanced video quality requirements of next generation display products.

LED backlighting enables higher contrast images in higher refresh-rate TVs. Manufacturers can use either dynamic color LEDs that are positioned behind the panel and allow for local area dimming, which provides higher contrast on selected sections of the screen; or white edge-LEDs positioned around the rim of the screen, which use a special diffusion panel to spread the light evenly behind the screen. LED backlighting also serves as a critical enabler of reduced power consumption. Because of its advantages, LED backlighting is expected to surpass traditional backlights that use fluorescent tubes by 2011 and achieve 74% penetration in 2013, according to DisplaySearch. LED backlighting requires a video processing control mechanism that determines when certain LEDs are lit, and how brightly, based on the video being displayed.

The combination of LED backlighting and 200/240Hz technologies provides an enabling platform for new feature developments in LCD TVs, particularly 3D technology, which is an area of intense interest to television manufacturers and consumers alike. DisplaySearch forecasts 3D-ready TVs will grow from 0.2 million units in 2009

to 64 million units in 2018.

Increasing screen sizes, higher frame rates, the desire to view Internet content on high-resolution displays, LED backlighting, 3D and other trends all present video performance challenges that must be addressed and are exacerbated with each new cycle of additional features. To differentiate their products, advanced flat panel

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manufacturers must implement video processing technologies that address these video performance issues as rapidly, as fully and as cost effectively as possible. Additionally, the interplay of performance, features, cost and power consumption is a key area of differentiation for digital television manufacturers. Most features and performance improvements carry cost premiums and increased power consumption, but intelligent design and utilization of appropriate video processing technologies can enable simultaneous improvements.

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 reduce the size and weight of projection devices and 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 less than two pounds for maximum portability.

Currently, the largest segment of the installed front projector market consists of business users who employ multimedia projectors to display both still and video presentation materials from PCs or other sources. Requirements for the business market include portability, compatibility with multiple software and hardware applications and features that ensure simple operation. In educational environments from elementary schools to university campuses, projectors help teachers integrate media-rich instruction into classrooms. Growth in overall projector sales is expected to come both from the business sector and the education market. Tiny, battery powered pico projectors embedded in a cell phone or PC, or available as independent devices weighing less than a pound, also are beginning to take hold in the consumer and business markets, fueled by their capability to display video content at high resolutions.

Worldwide, the emerging economies of Brazil, Russia, India and China, commonly referred to collectively as BRIC, are expected to be a leading driver of demand for information technology of all kinds, including projectors for business, education and the consumer sectors.

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.

Additional Markets

In addition to the large-screen flat panel display and digital projection markets, other sectors are also taking advantage of the trend towards higher performance and connectivity in digital video technology. Some of the applications expected to grow as a result of enhanced video quality include digital signage, video conferencing and video surveillance.

Our Core Technologies and Products

We have developed a portfolio of advanced video algorithms and intellectual property (IP) to address a broad range of challenges in digital video. Our technologies can dramatically improve video quality and are increasingly important as screen size and resulting quality issues 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 and in powerful combinations within single products. The majority of our products include one or more technologies to provide high-quality video solutions to our customers.

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Some of our proprietary core technologies include:

MEMC (motion estimation/motion compensation). Our proprietary MEMC technology significantly improves the performance and viewing experience of large advanced LCD panels by solving problems such as motion blur and judder. It also supports significant trends such as LED backlighting to improve video performance in digital TVs with 120Hz or higher frame rates and accommodates emerging 3D standards. Additionally, our MEMC technology improves video performance in non-TV applications such as video conferencing, 3D gaming and projection.

Networking. Our networking technology enables the same video stream to be networked across multiple displays, for applications such as connected video projection and digital signage.

Digital keystone correction. Our technology provides enhanced keystone and image correction performance for digital projection systems, particularly for short throw projectors which must project clearly at severe angles due to space limitations.

Our product development strategy is to leverage our expertise in video 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 our market lead in the digital projection market and to enhance our video processing solutions for advanced flat panel displays and other markets. Additionally, we look for ways to leverage our research and development investment into products that address high-value markets where our innovative proprietary technology provides differentiation for us and our customers. We deliver our technology in a variety of offerings, which take the form of single-purpose chips, highly integrated SoCs that incorporate specialized software, and full solutions incorporating software and other tools.

Our primary 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 in conjunction with an image processor to post-process video signals in order 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 targeted 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

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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 the U.S., China, Taiwan, Japan and Korea 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 51%, 53% and 57% of revenue in 2009, 2008 and 2007, respectively.

Our largest distributor, Tokyo Electron Device Ltd. (TED), is located in Japan. TED represented 35%, 32% and 33% of revenue in 2009, 2008 and 2007, respectively, and accounted for 22% and 32% of accounts receivable at December 31, 2009 and 2008, respectively. No other distributor accounted for more than 10% of revenue in 2009, 2008 and 2007.

We also have distributor relationships in Taiwan, China, Korea, Europe, Southeast Asia 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 49%, 47% and 43% of total revenue in 2009, 2008 and 2007, respectively.

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

Integrators. Integrators are original equipment manufacturers (OEMs) 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 represented 56%, 55% and 47% of revenue in 2009, 2008 and 2007, respectively. End customers include customers who purchase directly from us as well as customers who purchase products indirectly through distributors. Sales to Seiko Epson Corporation represented more than 10% of revenue in 2009, 2008, and 2007. Sales to SANYO Electric Co., Ltd. represented more than 10% of revenue in 2009.

No other end customer accounted for more than 10% of revenue in 2009, 2008 and 2007.

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 multimedia 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

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anticipation of their March 31 fiscal year ends. Additionally, holiday demand for consumer electronics, including high-end televisions, has contributed to increased revenue in the second half of certain years. Our sales in 2009 and 2008 did not follow our historical trends due to the global crisis in the credit and financial markets and significant reductions in consumer spending during the last quarter of 2008 and throughout 2009. As a result of the worldwide economic slowdown, it is extremely difficult for us to determine when or if historical trends are likely to resume.

Geographic Distribution of Sales

Sales outside the U.S. accounted for approximately 97%, 95% and 96% of our revenue in 2009, 2008 and 2007, respectively.

Financial information regarding our domestic and foreign operations is presented in Note 11 of the Notes to Consolidated Financial Statements included in Item 8. Financial Statements and Supplementary Data.

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 advanced flat panel display televisions, multimedia 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 levels of product integration, compliance with industry standards, time to market, cost, product performance, system design costs, IP, functional versatility provided by software and customer relationships and reputation.

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 directly compete with technologies that we offer.

We compete with specialized and diversified electronics and semiconductor companies that offer display processors or scaling components. Some of these include Broadcom Corporation, i-Chips Technologies Inc., Integrated Device Technology, Inc., MediaTek Inc., MStar Semiconductor, Inc., Realtek Semiconductor Corp., Renesas Technology Corp., Sigma Designs, Inc., Silicon Image, Inc., STMicroelectronics N.V., Sunplus Technology Co., Ltd., Techwell, Inc., Trident Microsystems, Inc., Zoran Corporation and other companies. Potential and current competitors may include diversified semiconductor manufacturers and the semiconductor divisions or affiliates of some of our customers, including Intel Corporation, LG Electronics, Inc., Matsushita Electric Industrial Co., Ltd., Mitsubishi Digital Electronics America, Inc., National Semiconductor Corporation, NEC Corporation, NVIDIA Corporation, NXP Semiconductors, Samsung Electronics Co., Ltd., SANYO Electric Co., Ltd., Seiko Epson Corporation, Sharp Electronics Corporation, Sony Corporation, Texas Instruments Incorporated and Toshiba America, Inc. In addition, start-up companies may seek to compete in our markets.

Research and Development

Our internal research and development efforts are focused on the development of our solutions for the multimedia projector and high-end television markets. Our development efforts are focused on pursuing higher

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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 for our customers.

We have invested, and expect to continue to invest, significant resources in research and development activities. Our research and development expense was $20.1 million, $26.5 million and $38.8 million in 2009, 2008 and 2007, respectively.

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 three third-party foundries for wafer fabrication and other manufacturers for packaging, assembly and testing of our 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 Form 10-K.

Intellectual Property

We rely on a combination of nondisclosure agreements and copyright, trademark and trade secret laws to protect the algorithms, design and architecture of our technology. Currently, we hold 119 patents and have 40 patent applications pending, which 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 7 to 16 years remaining in their respective term, depending on their filing date. 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, circumvented, challenged or licensed to others. To supplement the technologies we develop internally, we have also licensed rights to use IP held by third parties, and we expect to license additional technology rights in the future.

See Risk Factors in Part I, Item 1A, and Note 8: Commitments and Contingencies in Part II, Item 8 of this Form 10-K.

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 Form 10-K.

Employees

As of December 31, 2009, we had a total of 222 employees compared to 229 employees as of December 31, 2008. We consider our relations with our employees to be good.

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 free of charge as soon as reasonably practicable after we electronically file such material with the Securities and Exchange Commission (SEC). Our Internet

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address is *www.pixelworks.com*. The content on, or that can be accessed through, our website is not incorporated by reference into this filing. Documents filed by us with the Securities and Exchange Commission may be read and copied at the Public Reference Section of the SEC, 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. Our filings with the SEC are also available to the public through the SEC s website at *www.sec.gov*.

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, 2009, including our consolidated financial statements and related notes, and our other filings made from time to time with the Securities and Exchange Commission.

Macroeconomic Risks Related to the Company

The current adverse global economic environment and volatility in global credit and financial markets could materially and adversely affect our business and results of operations.

Financial, commercial and consumer markets may continue to experience extreme disruption and there can be no assurance that there will not be further deterioration of these markets. While we do not currently require access to credit markets to finance our operations, these economic developments have adversely affected, and are likely to continue to affect, our business in a number of ways. For instance, the economic crisis has decreased, and may continue to decrease, market acceptance of, and reduce the demand for, our products and the success of our product strategy. We face an increased risk that our customers and suppliers, who may experience decreased revenue and difficulty obtaining financing, will be unable to make significant purchases and continue their operations. It may become more difficult for us to collect payments from our customers on a timely basis, or at all, and our suppliers may not be able to maintain their production capacity and fulfill our orders on a timely basis, or at all. This has resulted, and could continue to result, in a decrease or cancellation of orders for our products.

As a result of the worldwide economic slowdown, it is difficult for us and our customers to forecast future sales levels based on historical information and trends. Portions of our expenses are fixed and other expenses are tied to expected levels of sales activities. To the extent that we do not achieve our anticipated levels of sales, our gross profit and net income could continue to be adversely affected until such expenses are reduced to an appropriate level. Additionally, if we are unable to reduce our costs to respond to future decreases in revenue, we may utilize more of our cash resources than we planned. Any future actions that we take to limit our usage of cash may also reduce our ability to execute our plans and strategies, which may weaken our competitive positioning and cause us to lose market share. We are unable to predict the duration and severity of the current disruption in financial markets and adverse economic conditions in the U.S. and other countries.

Company Specific Risks

Our product strategy, which is targeted at markets demanding superior video and image quality, may not lead to new design wins or significantly 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 pixel processing and delivering high levels of video and image quality. With this strategy, we continue to make further investments in the development of our ImageProcessor architecture for the digital projector market, with particular focus on

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adding increased performance and functionality. For the advanced television market, we are shifting away from our previous approach of implementing our intellectual property (IP) exclusively in system-on-chip integrated circuits (ICs), to an approach designed to improve video performance of our customers image processors through the use of our line of Motion Estimation Motion Compensation (MEMC) co-processor ICs. This strategy is designed to address the needs of the large-screen, high-resolution, high-quality segment of the television market. Although our new product strategy is developed to take advantage of market trends, 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.

Even if our new product strategy is properly targeted, we cannot assure you that the products we are developing will lead to a significant 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. 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.

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

Excluding gains on the repurchase of our convertible subordinated debentures, 2004 is our only year of profitability since inception and we have incurred operating losses 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. If we are not profitable in the future, we may be unable to continue our operations.

We have incurred indebtedness as a result of the sale of convertible debentures. We anticipate that we must repay or refinance the debentures by May 2011. We may be unable to meet this, or other, future capital requirements.

As of December 31, 2009, $15.8 million of our 1.75% convertible subordinated debentures were outstanding. Although the debentures are not due until 2024, the holders have the right to require us to purchase all or a portion of the debentures at each of the following dates: May 15, 2011, May 15, 2014 and May 15, 2019. Since the market price of our common stock is significantly below the conversion price of the debentures, we expect the holders to exercise their put option on May 15, 2011. We may not be able to refinance the debentures at terms that are as favorable as those currently contained in the debentures, or at terms that are acceptable to us at all. While we believe that our current cash and marketable securities balances will be sufficient to meet our capital requirements for the next twelve months, we cannot assure you that we will be able to maintain sufficient cash and marketable security balances to refinance or pay off the debentures when and if the put option is exercised, or that such a repurchase would not result in cash reserves too low for us to continue our business as a going concern. We may need, or could elect to seek, additional funding through public or private equity or debt financing, which we may not be able to obtain. If we issue equity securities, our shareholders may experience additional dilution or the new equity securities may have rights, preferences or privileges senior to those of our common stock.

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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. 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. We cannot assure you that the time required for the testing, evaluation and design of our products by our customers would not be significantly longer than nine months.

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. Additionally, 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, or increased amortization of non-cancelable prepaid royalties, any of which would negatively affect our operating results. For example, our provisions for obsolete inventory were $1.2 million, $1.5 million and $4.4 million in 2009, 2008 and 2007, respectively. Additionally, in 2007, we wrote off assets with a net book value of $6.9 million due to reductions in research and development personnel and changes in product development strategy.

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

We may determine that it is beneficial to increase our capacity to develop new and enhanced products in the future as the economy recovers. If we do not manage any internal expansion efforts effectively, our operating expenses could increase more rapidly than our revenue, adversely affecting our financial condition and results of operations. To manage any future expansion efforts 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 must also manage multiple relationships with customers, business partners, contract manufacturers, suppliers and other third parties. 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 or controls may not be adequate to support our operations and we may not be able to expand 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. Our operation of any acquired business would involve numerous risks, including, but not limited to:

- problems combining the acquired operations, technologies or products;
- unanticipated costs;

diversion of management s attention from existing operations;

adverse effects on existing business relationships with customers;

risks associated with entering markets in which we have no or limited prior experience;

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potential loss of key employees, particularly those of the acquired organizations; and

risks associated with implementing adequate internal control, management, financial and operating reporting systems.

Any future acquisitions and investments could also result in any of the following negative events, among others:

issuance of stock that dilutes current shareholders percentage ownership;

incurrence of debt;

assumption of liabilities;

amortization expenses related to acquired intangible assets;

impairment of goodwill;

large and immediate write-offs; and

decreases in cash and marketable securities that could otherwise serve as working capital.

A significant amount of our revenue comes from a limited number of customers and distributors, 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 35%, 32% and 33% of revenue in 2009, 2008 and 2007, respectively. Revenue attributable to our top five end customers represented 56%, 55% and 47% of revenue in 2009, 2008 and 2007, respectively. As of December 31, 2009 and 2008, we had three accounts that each represented 10% or more of accounts receivable. 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 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.

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 original equipment manufacturers (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. These arrangements make it difficult to monitor the financial condition and creditworthiness of our distributors, integrators and customers and to predict demand for our products. Our failure to manage one or more of these challenges 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. For example, we overestimated demand for certain of our products which led to significant charges for obsolete inventory in 2009, 2008 and 2007. On the

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other hand, if we underestimate demand, or if sufficient manufacturing capacity is not available, we would forego revenue opportunities, lose market share and damage our customer relationships.