Unparalleled

Rubicon Technology

Evolving Science. Evolving Solutions.™

2012 Annual Report

About Rubicon Technology, Inc.

Rubicon Technology, Inc. is a vertically integrated provider of advanced electronic materials that develops, manufactures and sells monocrystalline sapphire and other crystalline products for light-emitting diodes (LEDs), radio frequency integrated circuits (RFICs), blue laser diodes, optoelectronics and other optical applications. Our proprietary ES2 crystal growth technology produces very high-quality sapphire in a form that allows for volume production of various sizes and orientations of substrates and windows.

Rubicon's manufacturing capabilities cover every link in the industrial sapphire value chain—from raw material processing and crystal growth (including designing and building our own crystal growth furnaces) to high-precision core drilling, wafer slicing, surface lapping, large-diameter polishing and wafer cleaning processes. These capabilities are used to convert the bulk crystal into products with the quality and precision specified by customers. Rubicon is the unparalleled world leader in larger-diameter sapphire products to support next-generation LED, RFIC and optical applications.

Rubicon's legacy of innovation has led to unique technology and highly advanced processes used to produce high quality, large diameter sapphire at scale. Working as a trusted partner with our customers, we apply our vertically integrated manufacturing capabilities to produce a wide variety of superior quality sapphire products—and deliver what is needed, when it is needed.

Rubicon's dedication to continuous improvement at every stage of the sapphire manufacturing process enables us to address the evolving requirements of high-growth global markets. Our customers, in turn, depend on Rubicon to meet their exacting specifications.

Financial Highlights

In thousands, except share and per share data	2012	2011	2010
Revenue	**$ 67,243**	$134,000	$ 77,362
Gross profit (loss)	**(40)**	69,635	41,157
Total operating expenses	**12,996**	14,884	12,463
Income (loss) from operations	**(13,036)**	54,751	28,694
Net income (loss)	**(5,538)**	38,059	29,111
Net income (loss) per common share			
Basic	**$ (0.25)**	$ 1.67	$ 1.34
Diluted	**$ (0.25)**	$ 1.61	$ 1.28
Shares used in computing net income (loss) per common share			
Basic	**22,523,951**	22,852,205	21,726,090
Diluted	**22,523,951**	23,596,162	22,790,896
Cash and cash equivalents and short-term investments	**$ 43,934**	$ 54,818	$ 82,204
Working capital	**114,337**	119,056	106,524
Long-term investments	**—**	2,000	2,000
Stockholders' equity	**225,386**	228,231	192,094
Net cash from (used in) operations	**(2,738)**	24,612	24,059
Capital expenditures	**10,975**	48,228	49,429

Dear Fellow Shareholders:

Raja M. Parvez—President, Chief Executive Officer and Director

Emerging industries have always been subject to market volatility, and this was the case for the sapphire industry and for Rubicon in 2012. After the high-growth period of 2010 and early 2011, the sapphire market slowed in late 2011. Demand for two- and four-inch diameter sapphire declined sharply, and even after unit volume recovered, pricing for two-inch material remained unattractively low throughout 2012. Rubicon and other major sapphire suppliers had added capacity during a period of strong market growth, but demand for LED sapphire for the television backlighting market began to level off while the expected growth from the LED general illumination market was delayed.

Fortunately, because of our leadership position, Rubicon's sales of six-inch sapphire wafers continued to be relatively strong during 2012. We held our smaller diameter products off the market for a period of time to see whether pricing would recover. This shifted our sales mix further in the direction of large-diameter wafers for the year. However, low factory utilization and the weak pricing environment, particularly for smaller diameter products, put significant pressure on margins. For fiscal year 2012, Rubicon posted revenue of $67.2 million compared with 2011 revenue of $134.0 million, and a loss of $5.5 million for 2012 as compared to net income of $38.1 million in 2011.

Although industry capacity for sapphire exceeded overall demand in 2012, we expect that the continuing growth of the LED industry, fueled by the accelerating adoption of solid-state lighting, will absorb the existing sapphire capacity over the coming quarters. IMS Research estimates that the overall LED market will reach $13.9 billion, with the lighting market nearly doubling to $5.8 billion, in three years.

Meanwhile, the commercial success of Silicon-on-Sapphire (SoS) Radio Frequency Integrated Circuits (RFIC), now prevalent in smart phones and other consumer devices, resulted in strong demand for our sapphire wafers and represents a significant growth area going forward as new applications debut.

Our vertically integrated manufacturing capabilities remain central to our strategy and enable the continuous process improvement and innovation that allow Rubicon to maintain its leadership position in quality and innovation. Vertical integration is also key to achieving cost efficiencies and control of sapphire production, allowing us to scale production and provide our customers with a reliable supply of high-quality sapphire products that meet their unique and exacting specifications.

Our focus on the end-to-end manufacturing process and continuous innovation drove a number of milestones for Rubicon during 2012—achievements that further our quest to improve quality, reduce cost and serve more markets.

We solidified our position as the leading global provider of large diameter polished wafers due to our strength in both large-diameter crystal growth and wafer polishing. Underscoring this position, in January 2013 we announced that Rubicon has shipped over 400,000 polished six-inch wafers into the LED and SoS markets to date, far exceeding any of our competitors. We also have high volume eight-inch wafer production capability and have demonstrated twelve-inch wafer capability. Industry experts expect the use of larger diameter sapphire substrates to grow significantly in coming years. Research firm Yole Developpement forecasts that by 2017, six-inch sapphire wafers will comprise 49% of the sapphire market for LEDs. Given our strength in both large-diameter crystal growth and wafer polishing, we expect to remain the preferred supplier for large-diameter polished sapphire wafers and should benefit more than any other supplier from the transition to larger diameters.

In 2012, Rubicon was issued two U.S. patents for our post-crystal-growth technology. The first covered Rubicon's equipment and process developed to perform in-situ orientation of sapphire crystals. The second was for our process to perform continuous conditioning and self-optimization of polishing equipment to achieve consistent, ultra-flat and defect-free surface quality for high-volume, large-diameter wafers.

Sapphire's physical and optical qualities offer many benefits in applications such as military infrared windows, but existing methods used to produce large, high-quality sapphire windows do not meet all the demands of military applications. Drawing on its vast experience, Rubicon developed a new crystal growth platform to address this void. This research sets the stage for both defense and industrial applications for large sapphire windows. The ground-breaking project, dubbed Large-Area Net-shape Crystal Extraction (LANCE), is supported by the Air Force Research Laboratory (AFRL), with a total value of $4.7 million over three years.

In 2012, we continued to refine our vertical integration by incorporating a raw material preparation process, and we advanced our capability to produce patterned sapphire substrates. Our emerging patterning capability is moving forward and we expect to be the first to offer large-diameter patterned sapphire substrates for use in the high-brightness LED market later this year.

Developments such as these, along with ongoing improvements to our wafer fabrication processes, will increase throughput and reduce cost while maintaining the industry's highest standards, further bolstering our competitive advantage.

Moving forward, we remain excited about the high growth markets we serve. LED-based general illumination is finally gaining global traction, with multiple product and geographic markets being penetrated by many suppliers. Prices of LED devices are falling, lumens per dollar are rising, product quality is improving, and payback periods for commercial applications are more compelling each day. The SoS market is growing nicely as SoS RF chips continue to displace the legacy solutions. And new applications for sapphire continue to emerge. I believe our intellectual property for sapphire crystal growth and fabrication and our vertical integration make Rubicon the unparalleled leader in high-quality sapphire products and position us to benefit as these emerging markets grow.

Sincerely,

Raja M. Parvez
President, Chief Executive Officer and Director

Unparalleled

Industrial sapphire is a growth market, and Rubicon remains the unparalleled leader in the production and delivery of high-volume superior quality sapphire products. Sapphire today is most often associated with LED lighting—with approximately 90 percent of high brightness LEDs produced on sapphire substrates. Meanwhile, the versatile nature of sapphire's physical characteristics—hardness, optical clarity, physical strength, resistance to impact, abrasion and corrosion, durability under extreme pressure and temperature, and bio-compatibility—is driving a diversification of demand across multiple industries.

As the number and variety of applications for sapphire grows, Rubicon's peerless tradition of innovation enables the company to meet diversified demand and deliver high volumes of exceptional quality sapphire in a variety of sizes and crystal planar orientations. This unique capacity is made possible by Rubicon's vertically integrated manufacturing capability—controlling the sapphire production process from raw material through finished product. In addition to fostering ongoing innovation and process refinement, vertical integration enables true self-reliance and empowers Rubicon to effectively control costs and consistently meet customer requirements. The result: Rubicon remains the established, trusted supplier of choice to a growing roster of demanding manufacturers.

Addressing the demands of emerging markets while maintaining leadership in existing industries requires continuous process innovation—an area in which Rubicon is without equal. The year 2012 was marked by a variety of process improvements and innovations that will not only facilitate entry into new markets, but also bolster the company's global leadership as a supplier to the LED industry.

Increasing quality and lumen efficacy are spurring adoption of LEDs within the general illumination market, and increasingly attractive pricing for LED replacement bulbs is meeting with increased consumer enthusiasm. Solid State Lighting requires high-quality sapphire, and the need for continued cost efficiencies should result in greater demand for larger-diameter sapphire substrates. The LED lighting market is coming of age—poised for substantial long-term growth worldwide—and Rubicon is uniquely positioned to meet the needs of LED manufacturers.

Rubicon's singular expertise in large-diameter sapphire substrate production continues to fuel the fast-growing market for Silicon-on-Sapphire (SoS) wafers, used to produce high-performance radio frequency integrated circuits (RFICs). Demand for SoS RFICs—employed in smartphone handsets, communications infrastructure, consumer, industrial, automotive, military and space applications—remains strong and is growing.

As we move through 2013 and beyond, Rubicon leads a burgeoning global market in both technological innovation and business performance. Continued innovation, product excellence and delivery prowess will remain the hallmarks of our company.

Opportunity

Leadership

Innovation

Unparalleled Opportunity

Broad adoption of LEDs in general lighting is assured, pointing to steadily improving worldwide demand for sapphire substrates in the LED market.

Today, LEDs remain the single largest end market for sapphire, and within that market, the two primary applications are general lighting and LCD backlighting for televisions, computers, tablets and mobile devices. The use of LEDs in general illumination has now entered a period of accelerating growth, providing a renewed opportunity for Rubicon's vertically integrated manufacturing capabilities and global leadership in large-diameter sapphire production to have an impact.

The advantages of LEDs in general lighting are well-documented and compelling. Energy savings, long lifetime, reliability and environmental friendliness are positioning LEDs as the technology of choice for general lighting. Today, as LED prices decline, product quality improves, lumens-per-dollar rise, and payback periods for commercial applications shorten, broad adoption of LEDs in general lighting is assured, pointing to steadily improving worldwide demand for sapphire substrates in the LED market.

Sapphire's versatility and inherent physical characteristics—including hardness, resistance to corrosion, light transmission and thermal insulation—make it an ideal material for a wide range of additional applications, including optical windows and RFIC. Silicon-on-Sapphire (SoS) RFIC technology is poised to be adopted for additional applications as well, and Rubicon's vertically integrated manufacturing capabilities and legacy of quality and volume delivery will continue to make us the supplier of choice.

Moving forward, look for sapphire to gain favor as an alternative material for faceplates or covers in smart phones and other consumer electronic devices. Given sapphire's extreme hardness, fabrication costs make this particular application somewhat cost-prohibitive today. But Rubicon is working on alternative approaches to address this opportunity. A technology breakthrough could open up a market several times the size of the LED market for sapphire.

Unparalleled Leadership

As the trusted supplier of choice to a growing global LED market, Rubicon continues to invest in the intellectual property and expertise that the industry demands.

Large-diameter sapphire substrates are a critical component in the cost-effective production of LEDs for all end markets, and particularly for general lighting. Rubicon's vertically integrated, end-to-end manufacturing capabilities and proven crystal growth technology have propelled the company to a leadership position in the large-diameter sapphire.

Among the many initiatives undertaken by Rubicon's research and development team, work on patterned sapphire substrates (PSS) has been a primary focus recently. Before beginning the MOCVD process, most LED manufacturers etch a pattern onto sapphire substrates to facilitate epitaxial growth and to extract more light from each LED chip. This year, Rubicon expects to be the first to market with large-diameter patterned substrates for LED customers—allowing them to remove this pre-production process from their regimen and focus on their core technology.

As the trusted supplier of choice to a growing global LED market, Rubicon continues to invest in the intellectual property and expertise that the industry demands and is strongly positioned to capitalize on the tremendous opportunity presented by the lighting market.

Demand for sapphire continues to expand into additional diverse applications and markets, and Rubicon is uniquely positioned to provide the broad range of high-quality sapphire products required to address these emerging markets.

Unparalleled Innovation

Vertical integration is the catalyst driving Rubicon innovations—from the ability to grow progressively larger sapphire while maintaining exceptional quality, to being first to market with large-diameter wafers.

Rubicon's technological and market leadership are directly attributable to its heritage of innovation and vertical integration. This end-to-end manufacturing capability, with unparalleled intellectual property at each step of the manufacturing process, results in an advantageous cost structure and provides better control of product quality and delivery schedules.

Vertical integration is the catalyst driving Rubicon innovations—from the ability to grow progressively larger sapphire while maintaining exceptional quality, to being first to market with large-diameter wafers. To date, Rubicon has shipped more than 400,000 six-inch wafers—a number that will grow as more manufacturers seek to leverage the inherent cost efficiencies of larger-diameter substrates. Our expertise in and control of every link in the sapphire value chain spurs continuous improvement and refinement of the manufacturing process.

In 2012, Rubicon moved closer to full deployment of its in-house capability to purify and densify raw powdered aluminum oxide into the material used in the sapphire crystal growth process. This capability gives Rubicon more control over supply and quality and, when fully implemented in mid-2013, will result in significant cost savings. Also in 2012, patents for processes and technologies covering precision wafer grinding and polishing and in-situ orientation of sapphire crystals were issued to Rubicon by the United States Patent and Trademark Office.

The innovations made possible through vertical integration continue to drive sapphire adoption in markets beyond LEDs. In 2012, Rubicon announced a ground-breaking project, dubbed Large-Area Net-shape Crystal Extraction (LANCE), developed to produce optical quality large-area rectangular sapphire windows up to two inches thick for military sensing applications. The project, supported by a contract with the Air Force Research Laboratory (AFRL), has a total value of $4.7 million over three years.

At Rubicon, unparalleled innovation is not a goal or a marketing catch phrase; it is the culmination of everything we do.

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2012 Form 10-K

Rubicon Technology

Evolving Science. Evolving Solutions.™

UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, DC 20549

FORM 10-K

(Mark one)

☑ **Annual report pursuant to section 13 or 15(d) of the Securities Exchange Act of 1934 for the fiscal year ended December 31, 2012**

or

☐ **Transition report pursuant to section 13 or 15(d) of the Securities Exchange Act of 1934 for the transition period from to**

Commission file number 001-33834

RUBICON TECHNOLOGY, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**36-4419301**
(State or Other Jurisdiction of Incorporation or Organization)	**(I.R.S. Employer Identification No.)**
900 East Green Street Bensenville, Illinois	**60106**
(Address of Principal Executive Offices)	**(Zip Code)**

Registrant's Telephone Number, Including Area Code: (847) 295-7000

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

Title of each class	Name of each exchange on which registered
Common Stock, Par Value $0.001 per share	The 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 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 Website, 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 is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☐

Indicate by check mark whether the registrant is a large accelerated filer, an accelerated filer, a non-accelerated filer, 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.

Large accelerated filer ☐ Accelerated filer ☑ Non-accelerated filer ☐ Smaller reporting company ☐

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

As of June 30, 2012, there were 14,727,858 shares of common stock outstanding held by nonaffiliates of the registrant, and the aggregate market value of the common stock (based upon the closing price of these shares on the NASDAQ Global Market) was approximately $150,224,152.

The number of shares of the registrant's common stock outstanding as of the close of business on March 8, 2013 was 22,579,203

Documents incorporated by reference:

Portions of the Registrant's Proxy Statement for its Annual Meeting of Stockholders are incorporated by reference into Part III of this Annual Report on Form 10-K provided, that if such Proxy Statement is not filed with the Commission within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed no later than the end of such 120-day period.

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PART I

All statements, other than statements of historical facts, included in this Annual Report on Form 10-K regarding our estimates, expectations, beliefs, intentions, projections or strategies for the future, results of operations, financial position, net sales, projected costs, prospects and plans and objectives of management for future operations may be "forward-looking statements" as defined in the Private Securities Litigation Reform Act of 1995. We have based these forward-looking statements on our current expectations and projections about future events and financial trends that we believe may affect our financial condition, results of operations, business strategy, short-term and long-term business operations and objectives and financial needs. These forward-looking statements can be identified by the use of terms and phrases such as "believe," "plan," "intend," "anticipate," "target," "estimate," "expect," and the like, and/or future-tense or conditional constructions such as "will," "may," "could," "should," etc. (or the negative thereof). Items contemplating or making assumptions about actual or potential future sales, market size and trends or operating results also constitute forward-looking statements.

Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. Before investing in our common stock, investors should be aware that the occurrence of the risks, uncertainties and events described in the section entitled "Risk factors" and elsewhere in this Annual Report could have a material adverse effect on our business, results of operations and financial condition.

Although we believe that the expectations reflected in the forward-looking statements are reasonable, forward-looking statements are inherently subject to known and unknown risks and business, economic and other risks and uncertainties that may cause actual results to be materially different from those discussed in these forward-looking statements. Readers are urged not to place undue reliance on these forward-looking statements, which speak only as of the date of this Annual Report. We assume no obligation to update any forward-looking statements in order to reflect any event or circumstance that may arise after the date of this Annual Report, other than as may be required by applicable law or regulation. If one or more of these risks or uncertainties materialize, or if the underlying assumptions prove incorrect, our actual results may vary materially from those expected or projected.

This Annual Report also contains statistical data and estimates, including those relating to market size and growth rates of the markets in which we participate, that we obtained from industry publications and reports generated by market research firms. These publications typically indicate that they have obtained their information from sources they believe to be reliable, but do not guarantee the accuracy and completeness of their information. Although we have assessed the information in the publications and found it to be reasonable and believe the publications are reliable, we have not independently verified their data.

You should read this Annual Report and the documents that we reference in this Annual Report and have filed with the Securities and Exchange Commission (the "SEC") as exhibits with the understanding that our actual future results, levels of activity, performance and events and circumstances may be materially different from what we expect.

Unless otherwise indicated, the terms "Rubicon," the "Company," "we," "us," and "our" refer to Rubicon Technology, Inc.

ITEM 1. BUSINESS

OVERVIEW

We are an advanced electronic materials provider that develops, manufactures and sells monocrystalline sapphire and other innovative crystalline products for light-emitting diodes ("LEDs"), radio frequency integrated circuits ("RFICs"), blue laser diodes, optoelectronics and other optical applications. The emergence of sapphire in commercial volumes at competitive prices has enabled the development of new technologies such as high-brightness ("HB") white, blue and green LEDs and highly-integrated RFICs. We apply our proprietary crystal growth technology to produce high-quality sapphire products efficiently to supply our end-markets, and we work closely with our customers to meet their quality and delivery needs. We believe we are the leading supplier of sapphire products to the LED industry.

We are a vertically integrated manufacturer of high-quality sapphire substrates and optical windows that are used in a variety of high-growth, high-volume end market applications. During 2012 and 2011, our largest product sales were six-inch polished sapphire wafers (substrates) for use in LED applications and in Silicon-on-Sapphire ("SoS") RFICs. Two through four-inch diameter sapphire cores were our second largest product sales category during 2012 and 2011, and comprised the majority of our sales prior to 2011. Cores are sold to sapphire polishers who make wafers for use in LEDs and blue laser diodes. We also sell sapphire products used for windows and lenses in military, aerospace, sensor and other applications. We have extended our technology, giving us the ability to produce cores and wafers of up to twelve inches in diameter to support next generation LED and RFIC production.

We believe that LED and SoS RFIC production are following a similar path to that of production of integrated circuits on silicon substrates, which gradually migrated to production on increasingly larger substrates in order to reduce manufacturing costs. We feel that this migration to larger substrates and the related efficiency gains will help reduce the prices of LED devices and thereby facilitate greater adoption of LED technology in the backlighting and general lighting markets.

Our fully integrated in-house capabilities enable us to maintain our high- quality standards while controlling costs. We design, assemble and maintain our own proprietary crystal growth furnaces to grow high-purity, low-stress, ultra-low-defect-density sapphire crystals. In addition, we possess state-of-the-art capabilities in high-precision core drilling, wafer slicing, surface lapping, edge bevel grinding and wafer cleaning processes. We foster a strong sense of innovation and agility in our product development teams in an attempt to develop new products more effectively and to rapidly capture market growth.

We plan to leverage our technological advantage in efficiently producing high-quality, large-diameter sapphire products to maintain our leadership position and capitalize on future growth opportunities. To attain this goal, we are investing in research and development activities, continuing to enhance our operational capabilities, increasing our brand recognition and diversifying into new market segments.

We are a Delaware corporation incorporated on February 7, 2001. Our common stock is listed on the NASDAQ Global Market under the symbol "RBCN."

INDUSTRY OVERVIEW

Integrated circuits and other semiconductor devices have traditionally been fabricated on silicon substrates. However, for certain advanced applications, new electronic materials have emerged as the substrates of choice due to evolving integration and performance considerations. For example, sapphire is the preferred substrate material for HB white, blue and green LED applications due to its crystal lattice compatibility with the aluminum gallium nitride ("AlGaN") epitaxial layers, thermal expansion properties, commercial availability and cost efficiency.

LED applications

Advancements in solid state lighting utilizing HB white, blue and green LEDs over the past decade represent a disruptive technology in the lighting industry, providing significant performance, environmental and economic improvements compared to traditional incandescent or fluorescent lighting. For example, traditional incandescent lamps are inefficient and costly, emitting over 90% of consumed power as heat and lasting only 1,500 to 2,000 hours. Fluorescent lamps produce light by passing electricity through toxic mercury vapor, which creates an environmental disposal problem. LEDs do not contain mercury or lead and are 4.0 to 6.6 times as efficient as traditional incandescent lamps, while providing 35,000 to 50,000 hours of light. These factors, along with their durability, small form factor, excellent color performance and decreasing costs, have led to growing demand for LEDs in applications such as small displays for mobile devices, flashes for digital cameras, backlighting units ("BLUs") for displays used in notebook computers, desktop monitors, LCD televisions, public display signs, automotive lights, street lights, traffic signals and general and specialty lighting. Applications using LEDs have unit volumes in the billions and are expected to grow significantly over the next several years. The majority of HB LEDs are produced on sapphire substrates. Therefore, as the HB LED market grows, we believe the sapphire substrate market will grow as well.

Mobile devices. LEDs are used in color displays for mobile phones and other portable electronics such as GPS systems, MP3 players and digital camera flashes. LEDs are well suited for mobile devices due to their low current drain which extends battery life and durability while generating less heat. For these reasons, the vast majority of mobile devices utilize LED lighting.

LED backlighting units for large displays. LED BLUs now frequently replace conventional fluorescent BLUs in LCD flat panel televisions, notebook computers and desktop monitors. Benefits of LED BLUs in these applications are reduced power consumption/extended battery life, thinner displays, quicker response time and better color rendition. Displays made with LED BLUs also have no toxic materials, which helps electronics manufacturers to comply with environmental regulations.

Automotive lighting. Automobile manufacturers are increasingly using LEDs in car and truck headlights, turning and tail light functions as well as interior lighting. Benefits include near-instant response time, reduced power usage and more stylish and effective designs. Increased LED usage in other transportation vehicles such as motorcycles and commercial jets offers additional growth potential.

Commercial signage/displays. LEDs are widely used as light sources on large signs, LED displays and outdoor displays, such as jumbo screens used in sporting arenas and electronic billboard displays.

General illumination. LEDs are increasingly being used for outdoor and indoor commercial and public lighting, architectural lighting, street lights, traffic signals, retail displays, residential lighting, replacement lamps and off-grid lighting for developing countries. General illumination is expected to be one of the fastest growing applications for HB LEDs.

SoS RFIC and optical applications

SoS integrated circuits consist of a thin layer of silicon grown on a sapphire substrate and are primarily used in advanced wireless and military applications, such as RFICs. In particular, SoS RFICs are currently used in high volumes for mobile phones, broadband television set-top boxes, satellites and radiation-hardened applications for the defense industry. We believe SoS devices also represent a large potential market opportunity for sapphire due to sapphire's outstanding properties as an insulating substrate material with outstanding thermal conductivity and crystal lattice compatibility with silicon, which, among other things, enables monolithic integration in RFICs.

Sapphire is utilized for windows and optics for aerospace, sensor, medical and laser applications due to its wide-band transmission, superior strength, scratch resistance and high strength-to-weight ratio. Sapphire's

physical properties make it very well suited for jet fighter targeting pod windows, forward-looking infrared ("FLIR") windows for commercial and business jets as well as unmanned air vehicles or drones, rocket domes and transparent armor for military vehicles. Sapphire substrates are also used in the production of blue laser diodes. Blue laser diode technology allows much higher data storage for HD-DVD applications. Blue laser diodes are just beginning to penetrate potentially high-volume applications, such as the Blu-ray Disc DVD players and leading-edge video game systems.

Sapphire substrate industry supply chain

The production process for sapphire substrates is substantially similar to that of silicon wafers. A typical process flow consists of crystal growth, fabrication, slicing, lapping and polishing steps. Output quality is measured in flatness, desired crystal planar orientation, etch pitch density and crystalline structure uniformity. A great emphasis is placed on continuously improving yields and increasing production efficiency to drive costs lower to take advantage of emerging high-volume opportunities. Device manufacturers are seeking larger diameter sapphire wafers to allow them to gain efficiency in their production processes through higher throughput and reduced edge loss. Historical methods of sapphire crystal growth, which rely on lower-volume batch processes, are less able to meet the needs of leading end-market customers for high-quality crystals, demanding dimensional tolerances, high production volumes, cost efficiency and on-time delivery. Sapphire is the material on which the entire value chain is built.

THE RUBICON SOLUTION

As a leading producer of sapphire and provider of other crystals, we believe that the following are our principal competitive advantages:

Proprietary technology for crystal growth

We refer to the proprietary technology, equipment and processes we use in the production of our sapphire crystals as "ES2," which stands for "evolving science, evolving solutions." Due to our understanding of sapphire crystal growth seeding and crystal growth furnace operational parameters, we have developed a full in-house capability to design, build and maintain ES2 crystal growth furnaces with proprietary features. Our ES2 technology enables us to maintain a highly scalable, efficient operation and to produce large diameter sapphire wafers that we believe exceed the quality of any other sapphire producer today. Our competitors primarily employ the Kyropoulos, Czochralski ("CZ") or Edge-defined Film-fed Growth ("EFG") method to grow sapphire crystals. We believe that our ES2 technology, which employs an enhanced Kyropoulos methodology, significantly outperforms other methods of sapphire production with respect to capital costs, operating costs, throughput, quality and diameter size. Using our ES2 technology, we currently have the capability to produce sapphire products with diameters of up to eight inches in production volumes and we have produced wafers as large as twelve inches in diameter in our research and development.

High-quality sapphire products

We believe our sapphire crystal wafers are best-in-class in terms of quality. Our quality advantage is exhibited by our ability to produce crystals without defects such as grain boundaries and with low density of dislocations (10-100 per square centimeter) that is significantly better than the industry standard range. According to Sapphire Material, Manufacturing, Applications by E. Dobrovinskaya, L. Lytvynov and V. Pishchik (Springer 2009), sapphire grown using other methods have grain boundaries with different angles of disorientation, and significantly larger density of dislocations (5,000-100,000 per square centimeter). Our sapphire also has ultra-high-purity levels at least as high as 99.996%. Our high-purity sapphire helps our customers realize high yields in their processing. In addition, because of the high-purity of our products, our customers have the ability to utilize our sapphire for optical applications requiring high transmission in the ultraviolet through mid-infrared spectral ranges. Through our operational expertise in crystal growth, post-growth

processing and in-process manufacturing controls of sapphire wafer production, we are able to meet or exceed our customers' key product specifications, such as crystalline quality, dimensional tolerances and crystal orientation, while maintaining high production yields.

Vertical integration

We possess critical know-how and proprietary processes and metrology for crystal growth and sapphire processing. We grow sapphire crystals and have extensive capabilities to process sapphire into products that meet our customers' needs, from cores, wafers and window blanks to large diameter epi-polished wafers. We have recently developed the capability to process powdered aluminum oxide into the raw material used in our crystal growth process, providing both cost reduction and greater quality control. In the areas of fabrication and slicing, we employ high-volume manufacturing techniques and utilize customized tooling and metrology to hold very tight dimensional and orientation tolerances for sapphire cores and wafers. We also have high-precision lapping, edge bevel grinding and annealing capabilities for as-ground wafers and window blanks. We have proprietary six and eight-inch polishing and ultra-cleaning equipment and processes for LED, SoS RFIC and other applications that demand larger-diameter epi-polished wafers. By vertically integrating our processes, we are able to achieve significant operating efficiencies and produce high-quality, high-precision products that offer cost and quality benefits to our customers. This vertical integration also helps us expand our range of products, protect our technology and manufacturing trade secrets and improve our reliability as a supplier.

High volume and flexible manufacturing capability

We provide a high-volume and stable supply of products for our customers. We offer reliable, consistent on-time delivery to our customers through our flexible and scalable production operations. We have developed automated manufacturing and metrology platforms at each stage of our production process that enable us to increase capacity rapidly and switch products in manufacturing easily so that we can meet our customers' specific product demands.

Lowest total cost for customers

We compete on the quality of our products and our service levels to supplement our competitive pricing. We believe our high sustained yields, our dedication to consistent production and performance and our commitment to lasting customer relationships help assure our customers of a reliable source of high-quality sapphire products at stable prices. Our in-process quality control practices lead to predictable customer process yields, reduced inspection costs and overall high customer satisfaction. In addition, we work closely with our customers to understand their product specifications and then align our operations to meet their needs. Through close collaboration with our customers, we help them develop new applications for our advanced sapphire products and establish ourselves as a preferred supplier. As such, we believe our solution offers the lowest total cost for our customers.

STRATEGY

Our goal is to be the leading global provider of advanced monocrystalline substrate and window materials to the solid state lighting, SoS RFIC, aerospace and optical markets. A key element of our strategy has been to increase the proportion of our shipments of six-inch and greater diameter products. Six-inch wafers made up 73% of our revenue in 2012. The percentage of revenue coming from six-inch wafer sales in 2012 was particularly high due to pricing for cores and our decision to sell less of this product in that period. We expect sales of six-inch polished wafers to continue to represent the majority of our revenue as more LED chip manufacturers are expected to move to a large diameter substrate platform. However, the nature of our crystal growth process is such that even when maximizing the amount of large-diameter material harvested from each boule, some smaller diameter material is also yielded. Therefore we expect to continue to have a significant proportion of our sales in smaller-diameter products in the future.

The manufacturing processes and metrology required to meet customer requirements for flatness and smoothness of large diameter wafers are more sophisticated than those required for two-inch wafers and, as a result the large-diameter market has fewer sapphire competitors. As the first to market with large-diameter sapphire wafers, we have gained significant experience and expertise. As LED manufacturers gravitate toward larger substrates, we believe we have an advantage as a proven supplier of these products. We have provided eight-inch wafers for research and development purposes to both the LED and SoS industry.

Our strategy includes the following key elements:

Extend our technology and manufacturing leadership position

We believe our specialized manufacturing processes and proprietary technology and trade secrets provide us with significant competitive advantages. We have designed and developed product, equipment and process technology platforms from which we can rapidly increase capacity and stay flexible to meet our customers' needs. At each phase of our manufacturing process, we have developed and standardized automated equipment that employs similar processes to produce a full range of products. For example, most of our furnaces can grow sapphire crystals of the same size in various orientations to produce two through six-inch wafers and cores. At our crystal growth facility in Batavia, Illinois, we have installed larger furnaces that grow sapphire crystals large enough to produce two through eight-inch wafers and cores. This flexibility in crystal growth production reduces our operating costs and significantly improves our product development cycles. We have further extended our technology and now have the ability to produce up to twelve-inch cores and wafers and produce even larger diameter optical material. We intend to continue to develop advanced technology platforms to further increase the size of crystals produced and offer market-leading product specifications, while maintaining product quality and manufacturing efficiencies.

Capitalize on opportunities in high-growth markets

Our sapphire products are used in multiple applications in the high-growth LED and SoS RFIC markets. We also participate in optical market segments where sapphire is being adopted rapidly in new applications. We intend to continue to expand our opportunities by adding new categories and sizes of products with the goal of providing our customers in multiple high-growth end markets with a robust set of sapphire solutions. For example, one of the largest market segment opportunities is likely to come from the solid state lighting market, which in 2012 became the largest and fastest growing market for LED chips. Solid-state lighting will require higher brightness, lower-cost white LEDs that require larger-size LED chips. Larger LED chips are increasingly being manufactured in volume on four and six-inch sapphire wafers. Our process to manufacture large diameter, high-quality sapphire wafers is well suited to this market and we believe our processes will help enable its growth. We already have high volume production capability for polished sapphire wafers up to eight inch in diameter and are ready to provide eight-inch sapphire products in production volume as soon as the market requires them. We continue to evolve our technology to produce even larger sizes, as evidenced by the addition of our twelve inch diameter capabilities. We believe that LED chip manufacturers will continue to focus on using larger diameter substrates in order to further drive efficiencies in their manufacturing processes.

Enhance operational excellence

Our unique expertise in producing high-quality sapphire products in many sizes gives us a significant edge in process and product technology. We plan to further refine our proprietary ES2 crystal growth techniques, sapphire processing platforms and process controls to produce even higher quality crystals at greater yields. Our engineering efforts focus on the capability to design, build and maintain ES2 crystal growth furnaces with new proprietary features. We seek to continuously improve our sapphire processing and material inspection capabilities. We also promote operational excellence through lowering cycle times, raising yields and reducing overhead costs. Our ability to understand our customers' design and manufacturing processes enhances our ability to reach these goals. We employ Six Sigma methodologies to continuously improve our operational

platforms and we provide extensive training to current and new employees. Our patented technologies and process knowledge also make us more effective at reducing product cost.

Expand our sales and marketing efforts

We plan to enhance our brand recognition worldwide by increasing our marketing and communications programs and resources. For example, we have sponsored several LED conferences and we plan to extend our sponsorships into other markets, such as SoS RFICs and aerospace. We plan to further enhance our website, extend our public relations campaigns and increase our brand visibility in trade publications and with technical organizations. We rely on direct sales for the majority of our business. Although we have already entered multiple markets globally, we plan to increase the scale and geographical coverage of our sales efforts.

Penetrate new market segments

We target high-growth market segments where we believe we can gain a leadership position. Although production of sapphire cores and wafers is our focus today, we intend to leverage our crystal growth and processing know-how to develop high-quality crystal products for new substrate and window applications. Sapphire is becoming increasingly popular and is replacing quartz and glass in high-performance and harsh environment applications in the aerospace, petroleum and laser industries. For example, the U.S. military uses sapphire optical windows to construct targeting mechanisms for its jet fighters and drones and transparent armor for land vehicles. We plan on extending our existing proprietary manufacturing technology and using our deep understanding of crystal growth to develop new technologies to produce additional single crystal materials that can be used in optical applications as well as alternative substrates for certain electronic materials applications. For example, in 2012 we were contracted by the U.S. military to develop a new sapphire crystal growth process to produce large, thick rectangular windows. As the electronics and optical industries continue to develop new applications that take advantage of the unique properties of both sapphire and other single crystal products, our goal is to be the provider of choice for these applications.

TECHNOLOGY

Rubicon, as a vertically integrated manufacturer, has developed proprietary advanced technology at every stage of production from raw material processing through crystal growth, fabrication, wafer finishing and cleaning.

Our proprietary ES2 crystal growth technique produces high-quality sapphire crystals for use in our sapphire products. ES2 is derived from the standard Kyropoulos method of crystal growth. We developed this technique with the goal of establishing greater control over the crystal growth process while maintaining minimal temperature variations. Unlike other techniques, during the ES2 technique, the growing sapphire crystal exists in an unconstrained, low stress environment inside a closed growth chamber. The closed system allows for enhanced control of the melt, resulting in higher quality crystals. The temperature gradient between the melt and the crystal in the ES2 technique is significantly lower than in other crystal growth techniques. These aspects of the ES2 technique enable us to grow crystals that have a significantly lower dislocation density, higher crystal purity and higher uniformity than sapphire crystals grown using other techniques. The ES2 technique provides an inherent annealing process once the crystal is fully grown. This thermal annealing is an integral means of relieving stress in the crystal during the ES2 process. We believe we can readily scale our ES2 technology in a production environment while maintaining high crystal quality even as crystal boule size is increased. As a result of our proprietary ES2 technology, we believe that we currently offer the most efficient method for manufacturing large form factor, high-quality sapphire in the market today.

We have automated the crystal growth process of our proprietary ES2 technique. Our furnace environments are controlled by closed-loop control systems and the overall crystal growth process is run with minimal operator intervention, which reduces the potential for human error. In addition, a single operator can supervise the control of multiple ES2 furnaces simultaneously, which reduces costs.

We believe our proprietary ES2 process provides significant advantages over other crystal growth methods such as CZ and EFG. Unlike the ES2 technique, the CZ and EFG methods grow crystals with much higher levels of stress. This stress can decrease the overall quality of the sapphire crystal and requires increased processing time to relieve this stress, which increases production costs and decreases throughput, especially in larger diameter crystals. During the EFG process, the crystal is grown in a sheet form by pulling it through a die directly from the melt; while in the CZ process, the crystal must be rotated and pulled as the aluminum oxide melt is consumed. These constrained growth environments with higher thermal gradients increase stress and decrease crystal quality.

Our research and development ("R&D") activity plays a vital role in supporting our technology, product and revenue roadmaps. In 2012, 2011 and 2010, our R&D expenses totaled $2.3 million, $1.8 million and $1.1 million, respectively. Our R&D is focused on three key areas:

- very large area sapphire growth and fabrication;
- higher precision sapphire processing; and
- patterned substrates for the LED market which would integrate a downstream process into the wafer manufacturing flow providing efficiency for the LED wafer customer.

Our technical staff possesses deep and broad expertise in materials science and engineering. We also develop and utilize sophisticated metrology equipment to perform material and process characterization.

PRODUCTS

We offer a wide variety of sapphire products designed to meet the stringent specifications of our customers. Using our proprietary ES2 technology, we grow high-quality sapphire boules. We fabricate our products from the boules and sell them in four general categories: core, as-cut, as-ground and polished. We currently offer two, three, four, six and eight-inch diameter wafers, in C, R, A, and M planar orientations. A sapphire crystal has multiple orientation planes resulting from its crystalline structure symmetry.

Each orientation of the crystal structure is represented by a letter and differs in lattice structure. These variations result in different chemical, electrical and physical properties depending on the particular orientation plane. As a result, customers require different orientation planes depending on the intended application. For example, LED manufacturers typically request C plane crystals while SoS manufacturers typically request R plane crystals.

While we continue to offer all of the following products, our sales efforts are now focused on selling two through four inch cores to our polishing customers and six and eight-inch polished wafers to our semiconductor device manufacturing customers.

Product	Size	Orientation	Applications
Core	2," 3," 4"	C, R, A, M	• LED • Optical windows • Blue laser diode
As-Cut	2," 3," 4," 6", 8"	C, R, A, M	• Wafers for LED • Wafers for blue laser diodes • Wafers for SOS RFICs
As-Ground	2," 3," 4," 6", 8"	C, R, A, M	• Wafers for LED • Wafers for SOS RFICs • Blanks for optical windows • Wafer carriers
Polished	6", 8"	C, R, A	• Epi-polished wafers for SOS RFICs • Polished optical windows • Double-side polished wafer carriers

Core

Our core product line consists of our sapphire cores drilled from sapphire boules with high-precision. In 2012, 2011 and 2010, sales of core accounted for 15%, 46% and 70% of our revenue, respectively. Revenue from sapphire cores increased through the first half of 2011, then declined due to excess inventory at polishers and LED manufacturers. Major suppliers of sapphire, including us, added capacity in 2010 and 2011, resulting in excess supply during 2012 which caused lower product prices. We chose to sell fewer sapphire cores in 2012 awaiting price improvement. Core prices have continued to be depressed in early 2013. We expect that pricing will recover to some extent when LED production volume increases.

As-cut

Our as-cut product line consists of sapphire cores sliced using a wire saw machine. We believe we are able to offer our customers one of the highest-precision cut sapphire wafers in the market. This is especially important to customers who require precise orientation planes for applications such as LEDs, SoS, RFICs and blue laser diodes. In 2012, 2011 and 2010, sales of as-cut wafers accounted for less than 10% of our revenue.

As-ground

Our as-ground product line consists of cut sapphire wafers that undergo a double-sided lapping and edge grinding process. The lapping process ensures that the surface of the wafer is flat and smooth and has a high degree of parallelism. The grinding process bevels the edges of the wafers, making them more durable and less susceptible to chipping and cracking. In 2012, 2011 and 2010, sales of as-ground wafers accounted for less than 10% of our revenue.

Polished

Our polished product line primarily consists of finely polished, ultra-clean, six and eight-inch sapphire wafers. Our polished wafers undergo two polishing phases including both a mechanical and a chemical mechanical planarization phase. We believe we are currently one of a small number of fully vertically integrated firms offering six and eight-inch, high-quality C-plane and R-plane polished wafers. In 2012, 2011 and 2010 sales of polished wafers accounted for 75%, 49% and 25% of our revenue, respectively. Sales of six-inch polished sapphire wafers increased with the growth in the SoS RFICs market and with certain LED chip manufacturers migrating to a six-inch production platform. The percentage of revenue coming from six-inch wafer sales in 2012 was particularly high due to reduced sales of sapphire core in that period. While we expect six-inch polished wafer sales to continue to represent the majority of our revenue, we expect demand for sapphire cores to improve which may result in the percentage of revenue from six-inch polished wafer sales to be less than current levels. Demand from the LED market for six-inch polished wafers is expected to be limited in the first quarter of 2013 due to excess inventory at our customers but demand is expected to strengthen for this product in the second quarter of 2013.

Other

We also offer optically-polished windows and ground window blanks of sapphire and various fluoride compounds, such as calcium, barium and magnesium fluoride. We provide sapphire and other crystal products in many sizes, shapes and product formats for specialty applications.

MANUFACTURING

The process of growing the crystal begins by heating the raw material, aluminum oxide, until it reaches an ideal temperature above its melting point. This ideal temperature is essential for our process because it allows us to produce high-purity crystals with very low defect rates. Following the heating, a seed rod is inserted in the

melted material as the material is being cooled to crystallize into a boule. Following the growth process, each boule is rigorously inspected by using polarized lighting and magnification to find imperfections, such as bubbles, dislocations and granular deposits within the crystal.

We then drill the resulting boules into cylindrical cores using our custom high-precision crystal orientation equipment and proprietary processes. We use wire saws to slice each core into wafers of precise size and shape. These wafers are then pre-polished using precision lapping and edge-grinding equipment and then are ready to be polished into epitaxial wafers. All of these processes are performed in clean environments to reduce the chance of crystal contamination. Epi-polishing and wafer cleaning are performed in Class 10,000 and Class 100 clean-room environments, respectively.

We are dedicated to quality assurance throughout our entire operation. We employ detailed material traceability from raw material to finished product. Our quality system is certified as ISO9001:2000, and we have in-house expertise at the Six Sigma Black Belt level.

All of our long-lived assets are located in the U.S. and Malaysia.

SALES AND MARKETING

We market and sell our products through our direct sales force to customers in Asia, North America and Europe. Our direct sales force includes experienced and technically sophisticated sales professionals and engineers who are knowledgeable in the development, manufacturing and use of sapphire substrates, windows and other optical materials. Our sales staff works with customers during all stages of the substrate manufacturing process, from developing the precise composition of the substrate through manufacturing and processing the substrate to the customer's specifications.

A key component of our marketing strategy is developing and maintaining strong relationships with our customers, especially at the senior management level. We achieve this through working closely with our customers to optimize our products for their production processes. In addition, we are able to develop long-term relationships with key customers by offering product specification assistance, providing direct access to enable them to evaluate and audit our operations, delivering high-quality products and providing superior customer service. We believe that maintaining close relationships with senior management and providing technical support improves customer satisfaction and provides us with a competitive advantage when selling our products.

In order to increase brand recognition of our products and of Rubicon in general, we publish technical articles, advertise in trade journals, distribute promotional materials and participate in industry trade shows and conferences.

CUSTOMERS

Our principal customers are semiconductor device manufacturers and wafer polishing companies. A significant portion of our sales have been to relatively few customers. In 2012 our top two customers accounted for approximately 67% of our revenue. In 2011 and 2010, our top three customers accounted for approximately 69% and 46% of our revenue, respectively. Although we are attempting to diversify and expand our customer base, we expect our sales to continue to be concentrated among a small number of customers. However, we also expect that our significant customers may change from time to time. In 2012, sales to LG Innotek and Peregrine Semiconductor Corporation represented approximately 38% and 29% of our revenues, respectively. In 2011, sales to LG Innotek, Tera Xtal Technology Corp. and Crystalwise Technology represented approximately 38%, 19% and 12% of our revenues, respectively. In 2010, sales to LG Innotek, Tera Xtal Technology Corp. and Iljin Display Co, Ltd. represented approximately 17%, 15% and 14% of our revenues, respectively. No other customer accounted for 10% or more of our revenues during those periods.

In 2012, 48% of our sales were made to customers in Asia, 17% of our sales were made to customers in North America and 35% of our sales were made to customers in Europe. In 2011, 87% of our sales were made to customers in Asia, 9% of our sales were made to customers in North America and 4% of our sales were made to customers in Europe. In 2010, 90% of our sales were made to customers in Asia, 8% of our sales were made to customers in North America and 2% of our sales were made to customers in Europe. Our customer supply agreements tend to be for short periods of time, typically 90 days. Therefore, fluctuations in demand could cause our quarterly revenue to vary significantly. Our standard arrangement with most customers includes payment terms.

INTELLECTUAL PROPERTY

Our ability to compete successfully depends upon our ability to protect our proprietary technologies and other confidential information. We rely primarily upon a combination of trade secret laws and non-disclosure agreements with employees, customers and potential customers to protect our intellectual property. We have two patents and four pending patent applications with the U.S. Patent and Trademark Office, mostly covering aspects of our core production, wafer grinding and lapping technologies. However, we believe that factors such as the technological and innovative abilities of our personnel, the success of our ongoing product development efforts and our efforts to maintain trade secret protection are more important than patents in maintaining our competitive position. We pursue the registration of certain of our trademarks in the U.S. and currently have three registered trademarks.

COMPETITION

We participate in an innovative, specialized and competitive industry. The products we produce must meet certain demanding requirements to succeed in the marketplace. Although we account for a significant percentage of the total market volume today, we face significant competition from other established providers of similar products as well as from new and potential entrants into our markets.

We have several competitors that compete directly with us. In recent years, certain companies that formerly competed with us only in sapphire cores have entered into wafer polishing and are trying to establish positions in the large-diameter wafer market. These companies tend to focus on providing core and as-cut products rather than offering polished products. There are a limited number of companies that are substantially larger than we are that compete with us in a relatively small segment of their overall business. These larger companies tend to focus on providing polished products to customers rather than providing core, as-cut and as-ground products.

We believe that the key competitive factors in our markets are:

- consistently producing high-quality products in the desired size, orientation and finish;
- driving innovation through focused research and development efforts;
- possessing sufficient supply capacity to meet end-market customer demands;
- offering solutions through collaborative efforts with customers;
- pricing; and
- providing a low total cost-of-ownership for customers.

Although we face significant competition, we believe that our proprietary ES2 crystal growth technology, our fabrication and polishing capabilities and our business practices allow us to compete effectively on all of the above factors.

ENVIRONMENTAL REGULATION

In our manufacturing process, we use water, oils, slurries, acids, adhesives and other industrial chemicals. We are subject to a variety of federal, state and local laws regulating the discharge of these materials into the environment or otherwise relating to the protection of the environment. These include statutory and regulatory provisions under which we are responsible for the management of hazardous materials we use and the disposition of hazardous wastes resulting from our manufacturing processes. Failure to comply with such provisions, whether intentional or inadvertent, could result in fines and other liabilities to the government or third parties, injunctions requiring us to suspend or curtail operations or other remedies, which could have a material adverse effect on our business.

EMPLOYEES

As of December 31, 2012, we had 322 full-time employees, of which 294 work in technology and operations. None of our employees are represented by a labor union. We consider our employee relations to be good.

OTHER INFORMATION

You may access, free of charge, our reports filed with the SEC (for example, our Annual Report on Form 10-K, our Quarterly Reports on Form 10-Q and our Current Reports on Form 8-K and any amendments to those forms) indirectly through our Internet website (www.rubicon-es2.com). Reports filed with or furnished to the SEC will be available as soon as reasonably practicable after they are filed with or furnished to the SEC. Alternatively, if you would like a paper copy of any such SEC report (without exhibits) or document, write to Investor Relations, Rubicon Technology, Inc., 900 East Green Street, Bensenville, Illinois 60106, and a copy of such requested document will be provided to you, free of charge. The information found on our website is not part of this or any other report filed with or furnished to the SEC.

ITEM 1A. RISK FACTORS

You should carefully read the risk factors set forth below, together with the financial statements, related notes and other information contained in this Annual Report on Form 10-K. Our business is subject to a number of important risks and uncertainties, some of which are described below. The risks described below, however, are not the only risks that we face. Additional risks and uncertainties not currently known to us or that we currently deem to be immaterial may also impair our business operations. Any of these risks may have a material adverse effect on our business, financial condition, results of operations and cash flows. Please refer to the discussion of "forward-looking" statements on page one of this Annual Report on Form 10-K in connection with your consideration of the risk factors and other important factors that may affect future results described below.

Our results of operations, financial condition and business will be harmed if we are unable to effectively match our capacity with customer demand.

The markets we serve, particularly the LED and SoS products, are emerging markets. As a result, there can be significant fluctuations in demand for our products, which may result in our manufacturing facilities being underutilized from time to time, which can negatively impact our gross margins and overall business. Currently, sapphire supply is in excess of demand due to weaker demand from the LED market and excess sapphire capacity in the marketplace. As a result, we currently are not fully utilizing our manufacturing facilities. We expect this underutilization of some of our manufacturing facilities to continue into the first half of 2013. There can be no assurance that such sudden market changes will not occur again in the future adversely affecting our profitability.

We plan to continue to expand our production capacity as demand for our products strengthens. Our capacity expansion involves significant risks, including the availability of capital equipment and the timing of its installation, availability and timing of required electric power, management of expansion costs, timing of production ramp-up, qualification of our new equipment and demands on management's time. If our business does not grow fast enough to utilize this new capacity effectively, our business and financial results could be adversely affected. Conversely, delays in expanding our manufacturing capacity could impact our ability to meet future demand for our products. As a result, we might not be able to fulfill customer orders in a timely manner, which could adversely affect our customer relationships and operating results. Moreover, our efforts to increase our production capacity may not succeed in enabling us to manufacture the required quantities of our products in a timely manner or at the gross margins that we achieved in the past. There can be no assurance that we will be able to successfully reach our production, timing and cost goals for our expansion.

The average selling prices of products in the LED supply chain have historically been volatile.

Historically, our industry has experienced volatility in product demand and pricing. Changes in average selling prices of our products as a result of competitive pricing pressures, increased sales discounts and new product introductions by our competitors could have a significant impact on our profitability. Although we attempt to optimize our product mix, introduce new products, reduce manufacturing costs and pass along certain increases in costs to our customers in order to lessen the effect of decreases in selling prices, we may not be able to successfully do so in a timely manner and our results of operations and business may be harmed. In addition, rapid changes in market conditions have, at times, caused financial hardship for our customers, resulting is some write-offs of our accounts receivable. While we monitor the financial health of our customers, rapid changes in market conditions may result in additional accounts receivable write-offs in the future which could affect our results of operations.

If LED lighting does not achieve greater market acceptance, or if alternative technologies are developed and gain market traction, prospects for our growth and profitability would be limited.

Our future success largely depends on increased market acceptance of LED lighting. Approximately 52% and 93% of our revenue during 2012 and 2011, respectively, was from sales of our products for use in the manufacture of LED products. Potential customers for LED lighting systems may be reluctant to adopt LED

lighting as an alternative to traditional lighting technology because of its higher initial cost and relatively low light output per unit in comparison with the most powerful traditional lighting devices. In addition, our potential customers may have substantial investments and know-how related to their existing lighting technologies, and may perceive risks relating to the novelty, complexity, reliability, quality, usefulness and cost-effectiveness of LED products compared to other lighting sources available in the market. If acceptance of LED lighting does not increase significantly, then opportunities to increase our revenues and operate profitably would be limited.

Moreover, if effective new sources of light other than LED devices are developed, our current products and technologies could become less competitive or obsolete. Any of these factors could have a material and adverse impact on our growth and profitability.

The technology used in the LED industry continues to change rapidly, and if we are unable to modify our products to adapt to future changes in the LED industry, we will be unable to attract or retain customers.

We do not design or manufacture LEDs. Our ability to expand into new applications in the LED market depends on continued advancement in the design and manufacture of LEDs by others. The LED industry has been characterized by a rapid rate of development of new technologies and manufacturing processes, rapid changes in customer requirements, frequent product introductions and ongoing demands for greater functionality. Our future success will depend on our ability to develop new products for use in LED applications and to adjust our product specifications, such as our previous development of larger diameter wafers, in response to these developments in a timely manner. If our development efforts are not successful or are delayed, or if our newly developed products do not achieve market acceptance, we may be unable to attract or retain customers and our operating results could be harmed. In addition, although sapphire is currently the preferred substrate material for HB white, blue and green LED applications, we cannot assure you that the LED market will continue to demand the performance attributes of sapphire. Silicon carbide is another substrate material currently used for certain LED applications, including some that also use sapphire substrates. Other substrates being investigated and used in research and development for certain LED applications are silicon, aluminum nitride, zinc oxide and bulk gallium nitride. If sapphire is displaced as the substrate of choice for certain LED applications, our financial condition and results of operations would be materially and adversely affected unless we were able to successfully offer the competing substrate material.

Our continuing efforts to enhance our current products and to develop new products involve several risks, including:

- our ability to anticipate and respond in a timely manner to changes in customer requirements;
- the possibility that sapphire may in the future be replaced as a preferred substrate in certain LED applications;
- the significant research and development investment that we may be required to make before market acceptance of a particular new or enhanced product;
- the possibility that the LED industry may not accept our new or enhanced products after we have invested a significant amount of resources in development; and
- competition from new technologies, processes and products introduced by our current and/or future competitors.

If the development and acceptance of our products for the SoS RFIC market do not meet our expectations, our future operating results may be harmed.

The level of market acceptance of our SoS RFIC products may impact our future operating results. Our success in the SoS RFIC market depends on a number of factors, including the success of our customers' products in current applications and the acceptance of SoS RFIC products for newly targeted applications.

In addition, it is possible that other solutions, such as silicon-on-insulator, may become preferred over SoS. We cannot assure you that the RFIC market will continue to require the performance attributes of SoS solutions. If our products are not accepted more broadly in the RFIC market, our results of operations and business may be harmed.

We depend on a few customers for a major portion of our sales and our results of operations would be adversely impacted if they reduced their order volumes.

Historically, we have earned, and believe that in the future we will continue to earn, a substantial portion of our revenue from a small number of customers. In 2012, our top two customers accounted for approximately 67% of our revenue and in 2011, sales to our top three customers represented approximately 69% of our revenue. If we were to lose one of our major customers or have a major customer significantly reduce its volume of business with us, our revenues and profitability would be materially reduced unless we are able to replace such demand with other orders promptly. We expect to continue to be dependent on our significant customers, the number and identity of which may change from period to period.

We generally sell our products on the basis of purchase orders. Delays in product orders could cause our quarterly revenue to vary significantly. A number of factors could cause our customers to cancel or defer orders, including interruptions to their operations due to a downturn in their industries, natural disasters, delays in manufacturing their own product offerings into which our products are incorporated, securing other sources for the products that we manufacture or developing such products internally.

Our manufacturing processes may be interrupted or our production may be delayed if we cannot maintain sufficient electrical supply, which could adversely affect our business, financial condition and operating results.

Our manufacturing process requires a stable source of electricity. From time to time, we have experienced limited disruptions in our supply of electricity. Such disruptions, depending upon their duration, could result in a significant drop in throughput and yield of in-process crystal boules and create delays in our production. Although we use generators and other back-up sources of electricity, these replacement sources of electricity are only capable of providing effective back-up for limited periods of time. We cannot assure you that we will be successful in avoiding future disruptions in power or in mitigating the effects of such disruptions. Any material disruption in electrical supply could delay our production and could adversely affect our business, financial condition and operating results.

Our gross margins and profitability may be adversely affected by energy costs.

Most of our power consumption takes place in our crystal growth facilities in the U.S. Electricity prices could increase due to overall changes to the price of energy due to conditions in the Middle East, natural gas shortages in the U.S. and other economic conditions and uncertainties regarding the outcome and implications of such events. Once our current agreements expire, if electricity prices increase significantly, we may not be able to pass these price increases through to our customers on a timely basis, if at all, which could adversely affect our gross margins and results of operations.

Our contract with the City of Batavia for electricity requires us to purchase certain minimum amounts in order to retain the pricing under the contract. If the amount we use is less than the required minimum, the difference is resold at the then prevailing market price and, if the resale price is lower than our contract price, we will experience a loss on that resale, which could adversely affect our gross margins and operating results.

Our future operating results may fluctuate significantly, which makes our future results difficult to predict and could cause our operating results for particular periods to fall below expectations.

Our revenues and operating results have fluctuated in the past and are likely to fluctuate in the future. These fluctuations are due to a number of factors, many of which are beyond our control. These factors include, among others:

- timing of orders from and shipments to major customers;
- the gain or loss of significant customers;
- fluctuations in gross margins as a result of changes in capacity utilization, product mix or other factors;
- market acceptance of our products and our customers' products;
- our ability to develop, introduce and market new products and technologies on a timely basis;
- the need to pay higher labor costs as we grow;
- announcements of technological innovations, new products or upgrades to existing products by us or our competitors;
- competitive market conditions, including pricing actions by our competitors and our customers' competitors;
- developments in trade secrets, patent or other proprietary rights by us or our competitors;
- announcements by us or our competitors of significant acquisitions, strategic partnerships or divestitures;
- interruption of operations at our manufacturing facilities or the facilities of our suppliers;
- the level and timing of capital spending of our customers;
- additions or departures of key personnel;
- potential seasonal fluctuations in our customers' business activities; and
- natural disasters, such as floods, hurricanes and earthquakes, as well as interruptions in power supply resulting from such events or due to other causes.

The foregoing factors are difficult to forecast, and these, as well as other factors, could materially adversely affect our quarterly or annual operating results. If our revenues or operating results fall below the expectations of investors or any securities analysts that may publish research on our company, the price of our common stock would likely decline.

Our gross margins could decline as a result of changes in our product mix and other factors, which may adversely impact our operating results.

We anticipate that our gross margins will fluctuate from period to period as a result of the mix of products that we sell in any given period. If our sales mix shifts to lower margin products in future periods, our overall gross margin levels and operating results would be adversely impacted. Increased competition and the adoption of alternatives to our products, more complex engineering requirements, lower demand and other factors may lead to a further downward shift in our product margins, leading to price erosion and lower revenues for us in the future.

Our proprietary intellectual property rights may not adequately protect our products and technologies, and the failure to protect such rights could harm our competitive position and adversely affect our operating results.

To protect our technology, we have chosen to rely primarily on trade secrets rather than seeking protection through publicly filed patents. Trade secrets are inherently difficult to protect. While we believe we use reasonable efforts to protect our trade secrets, our directors, employees, consultants or contractors may

unintentionally or willfully disclose our information to competitors, whether during or after the termination of their services to our company. If we were to seek to enforce a claim that a third party had illegally obtained and was using our trade secrets, it would be expensive and time consuming, and the outcome would be unpredictable.

In addition, courts outside the U.S. are sometimes less willing to protect trade secrets than U.S. courts. Moreover, if our competitors independently develop equivalent knowledge, methods and know-how, it will be more difficult for us to protect our intellectual property and our business could be harmed.

We have two issued patents covering our products and technologies and four patent applications pending. There can be no assurance that these patents will be issued or that any patents issued will be of significant value to our business. Our commercial success will depend on obtaining and maintaining trade secret, patent and other intellectual property protection of our products and technologies. We will only be able to protect products and technologies from unauthorized use by third parties to the extent that valid, protectable and enforceable trade secrets, patents or other intellectual property rights cover them.

If we are not able to defend the trade secret or patent protection positions of our products and technologies, then we may not be able to successfully compete with competitors developing or marketing competing products and we may not generate enough revenue from product sales to justify the cost of development of our products and to achieve or maintain profitability.

The protection of our intellectual property rights and the defense of claims of infringement against us by third parties may subject us to costly litigation.

Other companies might allege that we are infringing certain of their patents or other rights. If we are unable to resolve these matters satisfactorily, or to obtain licenses on acceptable terms, we may face litigation. Any litigation to enforce patents issued to us, to protect trade secrets or know-how possessed by us or to defend us or indemnify others against claimed infringement of the rights of others could have a material adverse effect on our financial condition and operating results. Regardless of the validity or successful outcome of any such intellectual property claims, we may need to expend significant time and expense to protect our intellectual property rights or to defend against claims of infringement by third parties, which could have a material adverse effect on us. If we lose any such litigation where we are alleged to infringe the rights of others, we may be required to:

- pay substantial damages;
- seek licenses from others; or
- change, or stop manufacturing or selling, some or all of our products.

Any of these outcomes could have an adverse effect on our business, results of operations or financial condition.

The markets in which we operate are very competitive, and many of our competitors and potential competitors are larger, more established and better capitalized than we are.

The markets for selling high-quality sapphire products are very competitive and have been characterized by rapid technological change. This competition could result in increased pricing pressure, reduced profit margins, increased sales and marketing expenses, and failure to increase, or the loss of, market share or expected market share, any of which would likely seriously harm our business, operating results and financial condition.

Some of our competitors and potential competitors are substantially larger and have greater financial, technical, marketing and other resources than we do. Given their capital resources, the large companies with which we compete, or may compete in the future, are in a better position to substantially increase their manufacturing capacity and research and development efforts or to withstand any significant reduction in orders by customers in our markets. Such larger companies typically have broader product lines and market focus and

thus are not as susceptible to downturns in a particular market. In addition, some of our competitors have been in operation much longer than we have and therefore may have more long-standing and established relationships with our current and potential domestic and foreign customers.

We would be at a competitive disadvantage if our competitors bring their products to market earlier, if their products are more technologically capable than ours, or if any of our competitors' products or technologies becomes preferred in the industry. Moreover, we cannot assure you that existing or potential customers will not develop their own products, or acquire companies with products that are competitive with our products. Any of these competitive threats could have a material adverse effect on our business, operating results or financial condition.

We are subject to risks from international sales that may harm our operating results.

In 2012 and 2011 revenue from international sales was approximately 83% and 91%, respectively, of our total revenue. We expect that revenue from international sales will continue to constitute a significant portion of our total revenue for the foreseeable future. Our international sales are subject to a variety of risks, including risks arising from:

- trading restrictions, tariffs, trade barriers and taxes;
- differing intellectual property laws;
- economic and political risks, wars, acts of terrorism, political unrest, pandemics, such as a recurrence of the SARS outbreak or avian flu, boycotts, curtailments of trade and other business restrictions;
- the difficulty of enforcing contracts and collecting receivables through some foreign legal systems;
- unexpected changes in regulatory requirements and other governmental approvals, permits and licenses;
- sales variability as a result of transacting our foreign sales in U.S. dollars as prices for our products become less competitive in countries with currencies that are low or are declining in value against the U.S. dollar and more competitive in countries with currencies that are high or increasing in value against the U.S. dollar; and
- periodic foreign economic downturns.

Our future success will depend on our ability to anticipate and effectively manage these and other risks associated with our international sales. Our failure to manage any of these risks could harm our operating results.

We are dependent on the continued services and performance of our senior management, the loss of any of whom could adversely affect our business, operating results and financial condition.

Our future success is dependent on the continued services and continuing contributions of our senior management who must work together effectively in order to design our products, expand our business, increase our revenues and improve our operating results. The loss of services of senior management, particularly Raja M. Parvez, our president and chief executive officer, and William F. Weissman, our chief financial officer, could significantly delay or prevent the achievement of our development and strategic objectives. In addition, key personnel may be distracted by activities unrelated to our business. The loss of the services, or distraction, of our senior management for any reason could adversely affect our business, operating results and financial condition.

If we are unable to attract or retain qualified personnel, our business and product development efforts could be harmed.

Our success depends on our continued ability to identify, attract, hire, train, retain and motivate highly skilled technical, managerial, manufacturing, administrative and sales and marketing personnel. Competition for these individuals is intense, and we may not be able to successfully recruit, assimilate or retain sufficiently

qualified personnel. In particular, we may encounter difficulties in recruiting and retaining a sufficient number of qualified technical personnel. The inability to attract and retain necessary technical, managerial, manufacturing, administrative and sales and marketing personnel could harm our ability to obtain new customers and develop new products and could adversely affect our business and operating results.

We rely on a limited number of suppliers for raw materials and key components.

We depend on a small number of suppliers for certain raw materials, components, services and equipment used in manufacturing our products, including key materials such as aluminum oxide and certain furnace components. We generally purchase these items with purchase orders, and we have no guaranteed supply arrangements with such suppliers. We are subject to variations in the cost of raw materials and consumables from period to period. We do not control the time and resources that these suppliers devote to our business, and we cannot be sure that these suppliers will perform their obligations to us or do so on a timely basis. In addition, some of these suppliers are located in regions of the world that may experience periods of political or economic instability, which could inhibit their ability to supply necessary materials to us.

Any significant delay in product delivery or other interruption or variation in supply from our key suppliers could prevent us from meeting demand for our products and from obtaining future business. If we were to lose key suppliers or our key suppliers were unable to support our demand, our manufacturing operations could be interrupted and we could be required to attempt to establish supply arrangements with other suppliers. In addition, the inability of our suppliers to support our demand could be indicative of a marketwide scarcity of the materials, which could result in even longer interruptions. Any such delay or interruption would impair our ability to meet our customers' needs and, therefore, could damage our customer relationships and have a material adverse effect on our business and operating results.

Our products must meet exacting specifications, and undetected defects may occur, which may cause customers to return or stop buying our products.

Our customers establish demanding specifications for quality, performance and reliability that our products must meet. While we inspect our products before shipment, they still may contain undetected defects. If defects occur in our products, we could experience lost revenue, increased costs, delays in, or cancellations or rescheduling of orders or shipments, product returns or discounts, or damage to our reputation, any of which would harm our operating results and our business.

We are subject to numerous environmental laws and regulations, which could expose us to environmental liabilities, increase our manufacturing and related compliance costs or otherwise adversely affect our business and operating results.

In our manufacturing process, we use water, oils, slurries, acids, adhesives and other industrial chemicals. We are subject to a variety of foreign, federal, state and local laws and regulations governing the protection of the environment. These environmental laws and regulations include those relating to the use, storage, handling, discharge, emission, disposal and reporting of toxic, volatile or otherwise hazardous materials used in our manufacturing processes. These materials may have been or could be released into the environment at properties currently or previously operated by us, at other locations during the transport of the materials, or at properties to which we send substances for treatment or disposal. If we were to violate or become liable under environmental laws and regulations or become non-compliant with permits required at some of our facilities, we could be held financially responsible and incur substantial costs, including investigation and cleanup costs, fines and civil or criminal sanctions, third-party property damages or personal injury claims. In addition, new laws and regulations or stricter enforcement of existing laws and regulations could give rise to additional compliance costs and liabilities.

Our operations are concentrated in a small number of nearby facilities, and the unavailability of one or more of these facilities could harm our business.

Our manufacturing, research and development, sales and marketing, and administrative activities are concentrated in three facilities in the Chicago metropolitan area and one facility in Penang, Malaysia. Should a natural disaster, such as a tornado or flood, act of terrorism, war or outbreak of disease severely affect the Chicago area, our operations could be significantly impacted. We may not be able to replicate the manufacturing capacity and other operations of our Chicago facilities in our Malaysian facility or elsewhere, or such replication could take significant time and resources to accomplish. The disruption from such an event could adversely affect or interrupt entirely our ability to conduct our business. Similarly, should a disruption from such an event occur at our Malaysia facility, the disruption could adversely affect or interrupt our ability to conduct our business.

We may acquire other businesses, products or technologies; if we do, we may be unable to integrate them with our business effectively or at all, which may adversely affect our business, financial condition and operating results.

If we find appropriate opportunities, we may acquire complementary businesses, product lines or technologies. However, if we acquire a business, product line or technology, the process of integration may produce unforeseen operating difficulties and expenditures and may absorb significant attention of our management that would otherwise be available for the ongoing development of our business. Further, the acquisition of a business may result in the assumption of unknown liabilities or create risks with respect to our existing relationships with suppliers and customers. If we make acquisitions, we may issue shares of stock that dilute other stockholders, expend cash, incur debt, assume contingent liabilities or create additional expenses related to amortizing intangible assets, any of which may adversely affect our business, financial condition or operating results.

Our ability to comply with the required payments and financial covenant in our loan agreement depends primarily on our ability to generate sufficient operating cash flow.

Our ability to comply with the financial covenant under our loan agreement with Silicon Valley Bank will depend primarily on our success in generating sufficient operating cash flow and receivables. Under the loan agreement, we are required to maintain a specified ratio of (i) unrestricted cash plus net billed accounts receivable to (ii) obligations under the loan agreement plus current liabilities, which ratio is tested on a quarterly basis. Industry conditions and financial, business and other factors, including those we identify as risk factors in this and our other reports, will affect our ability to generate the cash flows and receivables we need to meet those requirements. Our failure to meet the requirements could result in a default and acceleration of repayment of the indebtedness under the credit facility. In such event, the bank would be entitled to stop extending credit to us, which will hinder our ability to operate, and would proceed against the collateral securing the indebtedness, which includes substantially all of our personal property (other than intellectual property assets).

We have incurred significant losses in prior periods and may incur losses in the future.

We have incurred significant losses in prior periods. As of December 31, 2012, we had an accumulated deficit of $97.3 million. While we had net income of $38.1 million in 2011 and $29.1 million in 2010, we incurred net losses of $5.5 million, $9.6 million and $2.9 million in 2012, 2009 and 2007, respectively. There can be no assurance that we will have sufficient revenue growth to offset expenses or to achieve profitability in future periods.

RISKS RELATED TO OWNERSHIP OF OUR COMMON STOCK

The price of our common stock has fluctuated substantially and may continue to do so.

Our common stock has only been publicly traded since November 16, 2007, and the trading price of our common stock has fluctuated substantially. From our initial public offering through March 11, 2013, the trading price of our common stock has ranged from a low of $2.50 to a high of $35.90.

Factors related to our company and our business, as well as broad market and industry factors, may adversely affect the market price of our common stock, regardless of our actual operating performance. Factors that could cause fluctuations in our stock price include, among other things:

- changes in market valuations of other companies in our industry;
- changes in financial guidance or estimates by us, by investors or by any financial analysts who might cover our stock or our industry;
- our ability to meet the performance expectations of financial analysts or investors;
- announcements by us or our competitors of significant products, contracts, acquisitions or strategic partnerships;
- general market and economic conditions; and
- the size of the public float of our stock.

Fluctuations caused by factors such as these may negatively affect the market price of our common stock. In addition, the other risks described elsewhere in this prospectus could adversely affect our stock price.

Our Board of Directors does not intend to declare or pay any dividends to our stockholders in the foreseeable future.

The declaration, payment and amount of any future dividends will be made at the discretion of our Board of Directors and will depend upon, among other things, the results of our operations, cash flows and financial condition, operating and capital requirements, and other factors the Board of Directors considers relevant. There is no plan to pay dividends in the foreseeable future, and if dividends are paid, there can be no assurance with respect to the amount of any such dividend.

The concentration of our capital stock ownership with the affiliates of one of our directors will limit your ability to influence corporate matters.

One of our directors, together with affiliates he controls, owns in the aggregate approximately 24% of our outstanding capital stock and voting power. For the foreseeable future, they will have significant influence over our management and affairs and over all matters requiring stockholder approval, including the election of directors and significant corporate transactions, such as a merger or other sale of our company or our assets. Their ownership may limit your ability to influence corporate matters and, as a result, the market price of our common stock could be adversely affected.

We could be the subject of securities class action litigation due to future stock price volatility.

The stock market in general, and market prices for the securities of companies like ours, have experienced extreme volatility that often has been unrelated to the operating performance of the underlying companies. These broad market and industry fluctuations may adversely affect the market price of our common stock, regardless of our operating performance. When the market price of a stock declines significantly, holders of that stock have sometimes instituted securities class action litigation against the company that issued the stock. If any of our stockholders brought a lawsuit against us, our defense of the lawsuit could be costly and divert the time and attention of our management.

Our certificate of incorporation, bylaws and Delaware law may discourage takeovers and business combinations that our stockholders might consider in their best interests.

A number of provisions in our certificate of incorporation and bylaws, as well as anti-takeover provisions of Delaware law, may have the effect of delaying, deterring, preventing or rendering more difficult a change in control of Rubicon that our stockholders might consider in their best interests. These provisions include:

- establishment of a classified board of directors;
- granting to the board of directors sole power to set the number of directors and to fill any vacancy on the board of directors, whether such vacancy occurs as a result of an increase in the number of directors or otherwise;
- limitations on the ability of stockholders to remove directors;
- the ability of our board of directors to designate and issue one or more series of preferred stock without stockholder approval, the terms of which may be determined at the sole discretion of the board of directors;
- prohibition on stockholders from calling special meetings of stockholders;
- prohibition on stockholders from acting by written consent; and
- establishment of advance notice requirements for stockholder proposals and nominations for election to the Board of Directors at stockholder meetings.

These provisions may prevent our stockholders from receiving the benefit from any premium to the market price of our common stock offered by a bidder in a takeover context. Even in the absence of a takeover attempt, the existence of these provisions may adversely affect the prevailing market price of our common stock if they are viewed as discouraging takeover attempts in the future.

The foregoing provisions of our certificate of incorporation and bylaws may also make it difficult for stockholders to replace or remove our management. These provisions may facilitate management entrenchment that may delay, deter, render more difficult or prevent a change in our control, which may not be in the best interests of our stockholders.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our executive, research and development and manufacturing functions are located on properties that we lease or own. We lease properties in Franklin Park, Illinois and Bensenville, Illinois. These facilities total approximately 102,600 square feet in seven buildings, which includes 30,000 square feet in our Bensenville, Illinois facility. The leases for these facilities terminate from July 2014 through August 2015. We own a 134,400 square foot facility in Batavia, Illinois. We also own a 65,000 square foot facility in Penang, Malaysia, which processes sapphire grown by us in our Illinois facilities into finished cores and wafers.

ITEM 3. LEGAL PROCEEDINGS

From time to time we may be named in claims arising in the ordinary course of business. Currently, there are no legal proceedings or claims pending against us or involving us that, in the opinion of our management, could reasonably be expected to have a material adverse effect on our business or financial condition.

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 Information

Our common stock began trading on the NASDAQ Global Market under the symbol "RBCN" on November 16, 2007. The following table sets forth the high and low sales prices for our common stock as reported on the NASDAQ Global Market for the periods indicated:

	High	Low
Fiscal year ended December 31, 2011		
First Quarter	$28.74	$17.65
Second Quarter	$29.79	$15.51
Third Quarter	$18.28	$10.50
Fourth Quarter	$12.82	$ 8.23

	High	Low
Fiscal year ended December 31, 2012		
First Quarter	$13.59	$8.20
Second Quarter	$10.92	$8.46
Third Quarter	$11.57	$8.28
Fourth Quarter	$ 9.96	$5.82

Holders

As of March 8, 2013, our common stock was held by approximately 27 stockholders of record and there were 22,579,203 shares of our common stock outstanding.

Dividend Policy

We have never declared or paid cash dividends on our common stock. We currently intend to retain future earnings to finance the growth and development of our business, and we do not anticipate declaring or paying any cash dividends in the foreseeable future.

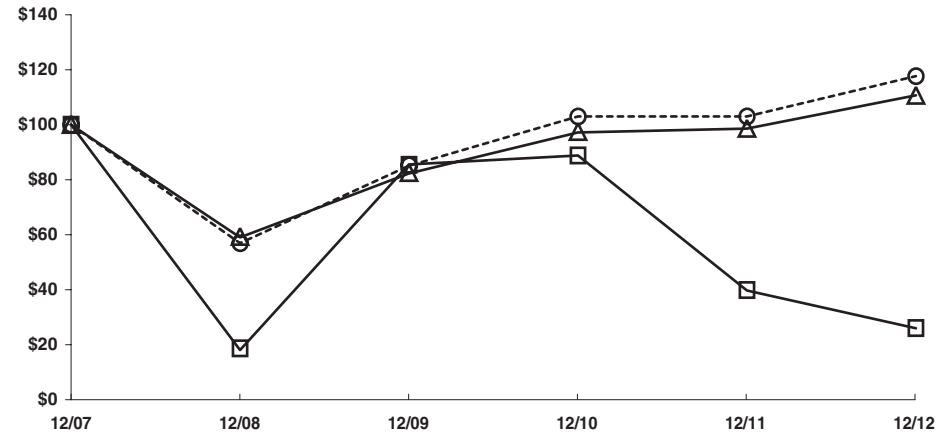
Performance Graph

The following graph compares the cumulative total stockholder return on our common stock during the period from November 16, 2007 (the first trading day following our initial public offering) through December 31, 2012, with the cumulative total returns of the NASDAQ Composite Index and the RDG Technology Composite Index. The graph assumes that the value of the investment in our common stock and in each of the indices (including reinvestment of dividends) was $100 on November 16, 2007.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*

Among Rubicon Technology, Inc., the National Association of Securities Dealers Automated Quotations (NASDAQ) Composite Index, and the Research Data Group (RDG) Technology Composite Index

This performance graph shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (the Exchange Act), or incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Exchange Act, except as shall be expressly set forth by specific reference in such filing.



	12/31/07	12/31/08	12/31/09	12/31/10	12/31/11	12/31/12
Rubicon Technology, Inc	100.00	17.94	85.52	88.76	39.54	25.73
NASDAQ Composite	100.00	59.03	82.25	97.32	98.63	110.78
RDG Technology Composite	100.00	56.89	85.04	103.10	103.14	117.75

The stock price performance reflected in this graph is not necessarily indicative of future stock price performance.

Recent Sales of Unregistered Securities

None.

Issuer Purchases of Equity Securities

In August 2011, we announced a repurchase plan approved by our Board of Directors authorizing the purchase of up to $25.0 million of our outstanding common stock over a period of two years. The stock repurchase program authorizes us to purchase shares of our common stock in the open market at times and prices considered appropriate by us depending upon prevailing market conditions and other corporate considerations.

There were no purchases made during the quarter ended December 31, 2012 of equity securities that are registered by us pursuant to Section 12 of the Exchange Act.

ITEM 6. SELECTED FINANCIAL DATA

The following selected consolidated financial data should be read in conjunction with "Management's Discussion and Analysis of Financial Condition and Results of Operations" and our consolidated financial statements and the related notes included elsewhere herein. The consolidated balance sheet data as of December 31, 2012 and 2011 and the consolidated statements of operations data for the years ended December 31, 2012, 2011 and 2010 are derived from our audited consolidated financial statements included elsewhere herein, which have been prepared in accordance with generally accepted accounting principles in the U.S. The consolidated balance sheet data as of December 31, 2010, 2009 and 2008 and the consolidated statements of operations data for the years ended December 31, 2009 and 2008 have been derived from our audited consolidated financial statements, which are not included in this Form 10-K.

SELECTED CONSOLIDATED FINANCIAL DATA

	Year ended December 31,				
	2012	2011	2010	2009	2008
	(In thousands, other than share and per share data)				
Consolidated statements of operations data:					
Revenue	$ 67,243	$ 134,000	$ 77,362	$ 19,808	$ 37,838
Cost of goods sold	67,283	64,365	36,205	23,427	25,746
Gross profit (loss)	(40)	69,635	41,157	(3,619)	12,092
Operating expenses:					
General and administrative	9,018	11,336	9,883	4,811	6,691
Sales and marketing	1,685	1,658	1,267	1,137	968
Research and development	2,274	1,806	1,079	801	862
Loss on disposal of assets	19	84	234	—	1,215
Total operating expenses	12,996	14,884	12,463	6,749	9,736
Income (loss) from operations	(13,036)	54,751	28,694	(10,368)	2,356
Other income (expense), net	450	(118)	346	738	2,003
Income (loss) before income taxes	(12,586)	54,633	29,040	(9,630)	4,359
Income tax benefit (expense)	7,048	(16,574)	71	—	(4)
Net income (loss)	$ (5,538)	$ 38,059	$ 29,111	$ (9,630)	$ 4,355
Net income (loss)					
Basic	$ (0.25)	$ 1.67	$ 1.34	$ (0.48)	$ 0.21
Diluted	$ (0.25)	$ 1.61	$ 1.28	$ (0.48)	$ 0.19
Weighted average common shares outstanding used in computing net income (loss) per common share					
Basic	22,523,951	22,852,205	21,726,090	20,117,543	20,892,040
Diluted	22,523,951	23,596,162	22,790,896	20,117,543	21,920,861

	As of December 31,				
	2012	2011	2010	2009	2008
			(In thousands)		
Consolidated balance sheet data:					
Cash and cash equivalents	$ 19,573	$ 4,290	$ 16,073	$ 3,860	$ 7,629
Working capital	114,337	119,056	106,524	55,121	55.725
Total assets	248,096	259,952	206,742	101,186	112,345
Total stockholders' equity	225,386	228,231	192,094	97,440	108,393

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

The following discussion and analysis of our financial condition and results of operations should be read together with our financial statements and related notes appearing elsewhere in this Annual Report on Form 10-K. This discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. You should review the "Risk Factors" section of this annual report for a discussion of important factors that could cause actual results to differ materially from the results described in or implied by the forward-looking statements described in the following discussion and analysis.

OVERVIEW

We are an advanced electronic materials provider that develops, manufactures and sells monocrystalline sapphire and other innovative crystalline products for Light-Emitting Diodes ("LEDs"), radio frequency integrated circuits ("RFICs"), blue laser diodes, optoelectronics and other optical applications. The emergence of sapphire in commercial volumes at competitive prices has enabled the development of new technologies such as high-brightness ("HB") white, blue and green LEDs and highly-integrated RFICs. We apply our proprietary crystal growth technology to produce high-quality sapphire products efficiently to supply our end markets, and we work closely with our customers to meet their quality and delivery needs.

We are a vertically integrated manufacturer of high-quality sapphire substrates and optical windows that are used in a variety of high-growth, high-volume end-market applications. During 2012 and 2011, our largest product sales were six-inch polished sapphire wafers (substrates) for use in LED applications and in Silicon-on-Sapphire ("SoS") RFICs. Two through four-inch diameter sapphire cores were our second largest product sales category during 2012 and 2011, and comprised the majority of our sales prior to 2011. Cores are sold to sapphire polishers who make wafers for use in LEDs and blue laser diodes. We also sell sapphire products used for windows and lenses in military, aerospace, sensor and other applications. We have extended our technology, giving us the ability to produce cores and wafers of up to twelve inches in diameter to support next generation LED and RFIC production. In addition, we have developed the ability to produce large diameter circular and rectangular sapphire windows for use in various optical window applications.

Our revenue consists of sales of sapphire materials sold in core, as-cut, as-ground and polished wafer forms in two, three, four, six and eight inch diameters as well as optical materials sold as blanks or polished windows. Products are made to varying specifications, such as crystal planar orientations and thicknesses. We recognize research and development revenue in the period during which the related costs and fees are incurred.

We sell our products on a global basis. The Asian, North American and European markets accounted for 48%, 17% and 35%, respectively, of our revenue for the year ended December 31, 2012, 87%, 9% and 4%, respectively, of our revenue for the year ended December 31, 2011, and 90%, 8% and 2%, respectively, of our revenue for the year ended December 31, 2010. Demand from the LED market was very strong starting in 2010 continuing through mid-year 2011, particularly in Asia where there is a high concentration of customers that participate in the LED market. Demand for our products from the LED market slowed in the second half of 2011 due to a slowdown in LED chip sales which resulted in a build-up of inventory in the LED supply chain. The decrease in demand from the LED market was partially offset by the increased strength of the SoS market. The demand for sapphire substrates from the LED market is improving but excess sapphire capacity added in the marketplace has kept pricing low throughout 2012 and going into 2013. While we expect demand for LED chips to continue to strengthen throughout 2013 with increased adoption of LED lighting, it is difficult to predict how quickly the excess capacity will be absorbed and when the pricing environment will improve. Demand for our products from the SoS market increased considerably in 2012. However, there is some seasonality in that market which is centered around the introduction of new smartphone models so we expect orders to slow in the first half of 2013 with growth resuming in the second half of 2013.

We currently depend on a small number of suppliers for certain raw materials, components, services and equipment, including key materials such as aluminum oxide and certain furnace components. If the supply of

these components were to be disrupted or terminated, or if these suppliers were unable to supply the quantities of raw materials required, we may have difficulty in finding, or may be unable to find, alternative sources for these items. As a result, we may be unable to meet the demand for our products, which could have a material adverse impact on our business.

We manage direct sales primarily from our Bensenville, Illinois offices. Substantially all of our revenue is generated by our direct sales force and we expect this to continue in the future.

We manufacture and ship our products from our facilities in the Chicago metropolitan area and from our facility in Penang, Malaysia. We have approximately 237,000 square feet of manufacturing and office space in Batavia, Franklin Park and Bensenville, Illinois and a 65,000 square foot facility in Penang, Malaysia, which processes sapphire grown by us in our Illinois facilities into finished cores and wafers. Our Malaysia facility currently finishes the majority of our core production and can produce production volumes of polished wafers. In March 2012, we acquired additional land in Batavia, Illinois to expand our crystal growth capacity. We have not yet determined when we will begin construction on this facility.

Financial operations

Revenue. Our revenue consists of sales of sapphire materials sold in core, as-cut, as-ground and polished forms in two, three, four, six and eight-inch diameters as well as optical materials sold as blanks or polished windows. Products are made to varying specifications, such as crystal planar orientations and thicknesses. We recognize research and development revenue in the period during which the related costs are incurred.

We have focused on increasing sales of larger diameter substrates, which we define as three inch or greater in diameter, as they generally yield higher gross margins. Sales increased significantly across most product lines and diameters for the year ended December 31, 2010, as demand for LED chips used for backlighting LED televisions and computer screens drove strong demand and price increases for our products. For the year ended December 31, 2011, we experienced a significant increase in revenue in large diameter polished product lines as one of our key customers was the first LED chip maker to move to a larger diameter (6”) platform in high volume production. In addition, increased pricing for our core products resulted in higher revenue from these products for the year ended December 31, 2011. However, in the fourth quarter of 2011, the LED market began softening considerably with the maturing of the LED backlighting markets, and the demand and pricing experienced a significant decrease across most product lines. The weak market conditions continued throughout 2012 and for the year ended December 31, 2012 we experienced a significant decrease in revenue from our core products and large diameter polished product lines for the LED market. The decrease in our large diameter product lines for the LED market was partially offset by a strong SoS market. While we expect demand for the LED chips to continue to strengthen throughout 2013 with increased adoption of LED lighting, it is difficult to predict how quickly the excess capacity will be absorbed and when the pricing environment will improve. The SoS market is expected to grow in 2013; however, there is some seasonality in the market which is centered around the introduction of new smartphone models. We expect orders to slow in the first half of 2013 with growth resuming in the second half of 2013.

Historically, a significant portion of our revenue has been derived from sales to relatively few customers. For the year ended December 31, 2012, our top two customers accounted for approximately 67% of our revenue and for the years ended December 31, 2011 and 2010, our top three customers accounted for approximately 69% and 46% of our revenue, respectively. Other than as discussed above, none of our customers accounted for more than 10% of our revenue for such periods. Although we are attempting to diversify and expand our customer base, we expect our revenue to continue to be concentrated among a small number of customers. We expect that our significant customers may change from period to period.

We recognize revenue upon shipment to our customers and from our government contract as costs and fees are incurred. Delays in product orders or changes to the timing of shipments could cause our quarterly revenue to vary significantly. We derive a significant portion of our revenue from customers outside of the U.S. In most periods, the

majority of our sales are to the Asian market and we expect that region to continue to be a major source of revenue for us. All of our revenue and corresponding accounts receivable are denominated in U.S. dollars.

Cost of goods sold. Our cost of goods sold consists primarily of manufacturing materials, labor, manufacturing-related overhead such as utilities, depreciation and rent, provisions for excess and obsolete inventory reserves, freight and warranties. We manufacture our products at our Illinois and Malaysia manufacturing facilities based on customer orders. We purchase materials and supplies to support such current and future demand. We are subject to variations in the cost of raw materials and consumables from period to period because we do not have long-term fixed-price agreements with most of our suppliers. We mitigate the potential impact of fluctuations in energy costs by entering into long-term purchase agreements. Once our current agreements expire, if electricity prices increase significantly, we may not be able to pass these price increases through to our customers on a timely basis, if at all, which could adversely affect our gross margins and results of operations.

Gross profit. Our gross profit has been and will continue to be affected by a variety of factors, including average sales prices of our products, product mix, our ability to reduce manufacturing costs and fluctuations in the cost of electricity, raw materials and other supplies.

General and administrative expenses. General and administrative expenses ("G&A") consist primarily of salaries and associated costs for employees in finance, human resources, information technology and administrative activities, as well as charges for outside accounting, legal and insurance fees and stock-based compensation.

Sales and marketing expenses. Sales and marketing expenses consist primarily of salaries and associated costs for employees engaged in sales activities, product samples, charges for participation in trade shows and travel.

Research and development expenses. Research and development ("R&D") expenses include costs related to engineering personnel, materials and other product development related costs. R&D is expensed as incurred. We believe our R&D expenses will generally increase as we continue to develop new products.

Other income (expense). Other income (expense) consists of interest income and expense and gains and losses on investments and currency translation.

Provision for income tax. We account for income taxes under the asset and liability method whereby the expected future tax consequences of temporary differences between the book value and the tax basis of assets and liabilities are recognized as deferred tax assets and liabilities, using enacted tax rates in effect for the year in which the differences are expected to be recognized. Our updated analysis of ownership changes that limit the utilization of the NOLs shows no ownership change. Our previous analysis of ownership changes that limit the utilization of the NOLs shows an ownership change but we believe that we are not restricted in our ability to use the full amount of the NOLs. A full valuation allowance was provided and no tax benefit was recorded until we could conclude that it is more likely than not that our deferred tax assets will be realized. During the twelve months ended December 31, 2011, we concluded that based on the current level of sustainable profitability that generates taxable income, it is more likely than not that our deferred tax assets will be realizable. We recognized a tax benefit of $3.3 million to record current and long-term deferred tax assets during the twelve months ended December 31, 2011. With the release of the valuation allowance, we began recording federal and certain state and non-U.S. income taxes attributable to the fiscal year's pre-tax income. The reversal of the valuation allowance favorably impacts our effective tax rate in 2011. The Illinois State Legislature has suspended the use of NOLs for taxable years ending after December 31, 2010 and before December 31, 2011, and has limited the net operation loss deduction to $100,000 for the years ending December 31, 2012 through December 31, 2014. In addition, Illinois has increased the corporate income tax rate which unfavorably impacts our effective tax rate. Our effective tax rate could fluctuate significantly on a quarterly basis and could be adversely affected to the

extent earnings are lower than anticipated. Our effective tax rate could also fluctuate due to changes in the valuation of our deferred tax assets or liabilities, or by changes in tax laws, regulations or accounting principles, as well as certain discrete items.

Stock-based compensation. The majority of our stock-based compensation relates primarily to administrative personnel and is accounted for as a G&A expense. For the years ended December 31, 2012, 2011 and 2010, our stock-based compensation expense was $2.0 million, $2.5 million and $2.3 million, respectively.

RESULTS OF OPERATIONS

The following table sets forth our statements of operations for the periods indicated:

	Year ended December 31,		
	2012	2011	2010
	(in millions)		
Revenue	$ 67.2	$134.0	$77.4
Cost of goods sold	67.3	64.4	36.2
Gross profit (loss)	(0.1)	69.6	41.2
Operating expenses:			
General and administrative	9.0	11.3	9.9
Sales and marketing	1.7	1.7	1.3
Research and development	2.3	1.8	1.1
Loss on disposal of assets	—	0.1	0.2
Total operating expenses	13.0	14.9	12.5
Income (loss) from operations	(13.1)	54.7	28.7
Other income (expense)	0.5	(0.1)	0.3
Income (loss) before income taxes	(12.6)	54.6	29.0
Income tax benefit (expense)	7.1	(16.5)	0.1
Net income (loss)	$ (5.5)	$ 38.1	$29.1

The following table sets forth our statements of operations as a percentage of revenue for the periods indicated:

	Year ended December 31,		
	2012	2011	2010
	(percentage of total)		
Revenue	100%	100%	100%
Cost of goods sold	100	48	47
Gross profit (loss)	—	52	53
Operating expenses:			
General and administrative	13	8	13
Sales and marketing	3	1	2
Research and development	3	2	1
Loss on disposal of assets	—	—	—
Total operating expenses	19	11	16
Income (loss) from operations	(19)	41	37
Other income (expense)	—	—	1
Income (loss) before income taxes	(19)	41	38
Income tax benefit (expense)	11	(13)	—
Net income (loss)	(8%)	28%	38%

Comparison of years ended December 31, 2012 and 2011

Revenue. Revenue was $67.2 million for the year ended December 31, 2012 and $134.0 million for the year ended December 31, 2011, a decrease of $66.8 million. We experienced a decrease in revenue from our products sold to the LED market. Revenue from the sale of sapphire cores, which are sold into the LED market, for the year ended December 31, 2012 decreased by $52.6 million, of which $42.3 million was attributed to lower pricing and $10.3 million was attributed to lower volume. We also experienced lower revenue from sales of our polished wafers by $14.4 million, which was the result of $36.9 million lower sales of polished wafers to the LED market offset in part by a $22.5 million increase in polished wafers sold to the SoS market. Of the $14.4 million reduction in revenue from polished wafers, $16.9 million was attributable to lower prices offset in part by an increase in volume of $2.5 million. We experienced an increase in research and development revenue of $1.2 million as we were awarded a contract with the Air Force Research Laboratory in July 2012 to produce large area sapphire slabs. Revenue with respect to this contract was recorded as costs were incurred as well as a portion of the fixed fee for the year ended December 31, 2012. The contract will continue for duration of three years and the total value of the contract is $4.7 million. We also experienced lower optical revenue of $1.0 million due to the decrease in sales for sensor and instrumentation applications. While demand for polished wafers was strong for the year ended December 31, 2012, prices were lower. We believe pricing will slowly recover for sapphire cores as the excess capacity at sapphire producers is gradually absorbed by increasing demand from the LED and SoS markets, but it is difficult to predict exactly when and how quickly pricing will improve. Our wafer sales are almost exclusively six-inch wafers which have not yet been broadly adopted by the LED industry. Because the usage of six-inch wafers is limited and competitors are eager to participate in this promising market, we expect pricing of six-inch wafers to decline in the near term.

Gross profit. Gross loss was $40,000 for the year ended December 31, 2012 as compared to a gross profit of $69.6 million for the year ended December 31, 2011, a decrease of $69.6 million. The decrease in gross profit is primarily due to the reduction in revenue, which in turn is attributable to decreased pricing for our products as well as lower utilization of our production facilities attributable to the reduced demand from the LED market due to the buildup of excess inventory in the supply chain. Due to changes in customers' product specifications an excess and obsolete inventory reserve adjustment of $719,000 was recorded for the year ended December 31, 2012, which reduced inventory and increased cost of goods sold as various items in stock were no longer in demand. In addition, pricing for our small diameter core products declined throughout 2012 and in the fourth quarter of 2012 market prices fell below our carrying cost in inventory. As a result we recorded a lower of cost or market adjustment which reduced inventory and increased cost of goods sold by a net of $1.5 million for the year ended December 31, 2012. In addition, given the relative strength of the six-inch market, we wanted to make sure our boule inventory was capable of producing high-yield six-inch material. Consequently, we decided to recycle some boules from inventory that might have produced lower than normal six-inch yield. This added approximately $927,000 to cost of goods sold for the year ended December 31, 2012.

General and administrative expenses. G&A expenses were $9.0 million for the year ended December 31, 2012 and $11.3 million for the year ended December 31, 2011, a decrease of $2.3 million. Our bad debt expense decreased by $1.9 million as we made accommodations for the year ended December 31, 2011 to certain key customers of our small diameter cores by agreeing to write off a portion of their accounts receivable balances that did not re-occur in 2012. We also experienced a decrease of employee compensation costs of $385,000, resulting from a lower performance based bonus expense. In 2012, we also experienced higher legal expenses of $488,000, offset partially by lower consulting expenses of $268,000 and lower recruiting expenses of $102,000.

Sales and marketing expenses. Sales and marketing expenses were $1.7 million for each of the years ended December 31, 2012 and, 2011. A slight increase of $27,000 in sales and marketing expenses is attributable to additional employee compensation costs primarily due to annual salary increases and employee stock options expense.

Research and development expenses. R&D expenses were $2.3 million for the year ended December 31, 2012 and $1.8 million for the year ended December 31, 2011, an increase of $468,000. The increase is

attributable to higher employee compensation costs of $204,000 related to increased headcount and salary increases, an increase in spending on research projects of $186,000 and an increase in travel of $77,000.

Other income (expense). Other income was $450,000 for the year ended December 31, 2012 and other expense was $118,000 for the year ended December 31, 2011, an increase in other income of $568,000. The increase was primarily due to an increase of $719,000 from realized gains on foreign currency translation partially offset by a $159,000 decrease in interest income on lower investment balances.

Income tax benefit (expense). Income tax benefit was $7.1 million for the year ended December 31, 2012 as compared to an income tax expense of $16.5 million for the year ended December 31, 2011. Our projected effective tax rate, while in a profit operating mode, is 30% to 35%; however, the rate of tax benefit accrued while in a loss mode will typically be higher and will vary based on the distribution of activity between our U.S. and Malaysia operations.

Comparison of years ended December 31, 2011 and 2010

Revenue. Revenue was $134.0 million for the year ended December 31, 2011 and $77.4 million for the year ended December 31, 2010, an increase of $56.6 million. We experienced a significant increase in revenue across most product lines and diameters in 2011 due to increased demand for our products, which led to a large price increase in the first half of 2011. We directed most of our additional crystal growth production capacity to support the growing demand for six-inch polished wafers. As a result, we increased our sales of polished wafers by $45.7 million primarily on higher volume of $55.1 million partially offset by lower pricing of $9.4 million, as demand for these products increased in both the LED and SoS RFIC markets. Revenue from the sale of core products for the year ended December 31, 2011 increased by $8.0 million, of which $23.0 million was due to an increase in pricing partially offset by a decrease of $15.0 million due to lower volume. We also had higher revenue of $3.1 million from optical products due to increased sales of sapphire for sensor and instrumentation applications.

During the second half of 2011, demand from the LED market weakened due to excess inventory in the supply chain. As a result, prices for our products declined. While demand for large diameter polished wafers was strong throughout 2011, the prolonged weakness in the LED market impacted pricing for this product in the fourth quarter as customers for this product accumulated excess inventory as well.

Gross profit. Gross profit was $69.6 million for the year ended December 31, 2011 and $41.2 million for the year ended December 31, 2010, an increase of $28.4 million. The increase in gross profit is primarily attributable to higher revenue due to increased core pricing in the first half of 2011 and higher volume sales of polished wafers.

General and administrative expenses. G&A expenses were $11.3 million for the year ended December 31, 2011 and $9.9 million for the year ended December 31, 2010, an increase of $1.4 million. Our bad debt expense increased by $1.7 million as we made accommodations to certain key customers of our small diameter cores by agreeing to write off a portion of their accounts receivable balances. Also, investor relations expense increased $728,000, primarily due to increased outside support services and investor relations consulting, audit fees increased $84,000, tax consulting expense increased $102,000 and executive travel expenses increased $111,000, primarily due to increased frequency in travel outside the U.S. G&A expenses for the Malaysia facility were also $202,000 higher as the facility began to incur G&A expenses starting in the third quarter of 2010. The G&A increases noted above were partially offset by a decrease of employee compensation costs of $1.8 million, resulting from a lower performance based bonus of $2.1 million, offset by an increase of $143,000 from annual salary increases and expenses associated with issuance and exercise of employee stock options and $158,000 of recruiting expenses.

Sales and marketing expenses. Sales and marketing expenses were $1.7 million for the year ended December 31, 2011 and $1.3 million for the year ended December 31, 2010, an increase of $391,000. The

increase in sales and marketing expenses is attributable to additional employee compensation costs primarily due to annual salary increases, employee stock options expense and additional sales hires to support expansion as well as increased travel expense.

Research and development expenses. R&D expenses were $1.8 million for the year ended December 31, 2011 and $1.1 million for the year ended December 31, 2010, an increase of $727,000. The increase is attributable to higher employee compensation costs of $246,000 and an increase in spending on research projects of $458,000.

Other income (expense). Other expense was $118,000 for the year ended December 31, 2011 and other income $346,000 for the year ended December 31, 2010, a decrease in other income of $464,000. The decrease was primarily due to a $106,000 decrease in interest income on lower investment balances as well as a $350,000 realized loss on foreign currency translation.

Income tax expenses. Income tax expenses were $16.5 million for the year ended December 31, 2011, as our effective tax rate was 30.3% for the year. Due to our tax net operating loss position, there were no income taxes for the year ended December 31, 2010. During the year ended December 31, 2011, management concluded that based on the current level of sustainable profitability that generates taxable income, that it is more likely than not that our deferred tax assets will be realizable. With the release of the valuation allowance, we began recording federal and certain state and non-U.S. income taxes attributable to the fiscal year's pre-tax income at the statutory rates adjusted for various tax benefits that lower the rate.

LIQUIDITY AND CAPITAL RESOURCES

We have historically funded our operations using a combination of issuances of common stock and cash generated from our operations. On January 2, 2013, we entered into a three year term agreement with a bank to provide us with a senior secured credit facility of $25.0 million. The agreement provides for us to borrow up to 80% of eligible accounts receivable and up to 35% for domestically held raw material and finished goods inventory. Advances against inventory are limited to 40% of the aggregate outstanding on the revolving line of credit and $10.0 million in aggregate. We have the option to borrow at an interest rate of LIBOR plus 2.75% or the Wall Street Journal prime rate prime rate plus 0.50%. If we maintain liquidity of $20.0 million or greater with the lending institution, then the borrowing interest rate options are LIBOR plus 2.25% or the Wall Street Journal prime rate. Unused revolving line facility fee is 0.375% per annum. The facility is secured by a first priority interest in substantially all of our personal property, excluding intellectual property. We are required to maintain an adjusted quick ratio of 1.40 to 1.00, maintain operating and other deposit accounts with the bank or bank's affiliates of 25% of our total worldwide cash, securities and investments, and we can only pay dividends or repurchase capital stock with the bank's consent during the three year term.

As of December 31, 2012, we had cash and short term investments totaling $43.9 million, including cash of $7.9 million held in deposits at major banks, $11.6 million invested in money market funds and $24.4 million of short term investments including commercial paper, corporate notes and bonds, U.S. treasury securities, FDIC guaranteed certificates of deposit and common stock.

Cash flows from operating activities

	Year ended December 31,		
	2012	2011	2010
		(in millions)	
Net income (loss)	$ (5.5)	$ 38.1	$ 29.1
Non-cash items:			
Depreciation and amortization	12.0	9.7	6.0
Stock based compensation and other, net	2.0	2.5	2.5
Deferred taxes	(6.3)	13.5	—
Excess tax benefits from stock based compensation	(0.2)	(1.4)	—
Total non-cash items:	7.5	24.3	8.5
Working capital:			
Accounts receivable	20.0	(14.0)	(13.7)
Accounts payable	(4.0)	3.7	7.1
Other accruals	(0.4)	(1.6)	3.6
Inventories	(24.2)	(12.0)	(4.4)
Prepaid expenses and other assets	3.9	(13.9)	(6.1)
Total working capital items:	(4.7)	(37.8)	(13.5)
Net cash (used in) provided by operating activities	$ (2.7)	$ 24.6	$ 24.1

Cash used in operating activities was $2.7 million for the year ended December 31, 2012. During such period, we generated a net loss of $5.5 million, which included non-cash charges of $7.5 million, and a decrease in working capital of $4.7 million. The net working capital change was comprised of a decrease in accounts receivable of $20.0 million due to significant collections from several key customers and an overall decreased accounts receivables balance on lower revenues, an increase in inventory of $24.2 million primarily due to an increase in our stock of raw materials and sapphire boules, and a decrease in accounts payable of $4.0 million due to timing of payments. We also experienced a decrease in other prepaid assets of $3.9 million, primarily related to a decrease in the purchase of furnace construction and replacement parts and items used in the polishing of wafers.

Cash provided by operating activities was $24.6 million for the year ended December 31, 2011. During such period, we generated net income of $38.1 million, which included non-cash charges of $24.3 million, and a decrease in net working capital of $37.8 million. The decrease in net working capital was comprised of an increase in accounts receivable of $14.0 million due to timing of collections, a decrease in other accruals of $1.6 million consisting primarily of a decrease in deposits of $1.1 million from customer prepayments, an increase in prepaid expenses and other current assets of $13.9 million due to an increase in purchases of furnace construction and replacement parts for both the Illinois and Malaysia facilities, an increase in inventory of $12.0 million, which was attributed to an increase in raw materials inventory as we continued to grow our safety stock, as well as an increase in work-in-progress and finished goods inventory due to lower demand of the two and four-inch core products in the fourth quarter. This was offset by an increase in accounts payable of $3.7 million due to timing of payments.

Cash provided by operating activities was $24.1 million for the year ended December 31, 2010. During such period, we generated net income of $29.1 million, which included non-cash charges of $8.5 million, and a decrease in net working capital of $13.5 million. The decrease in net working capital was comprised of an increase in accounts receivable of $13.7 million due to higher sales and volumes, an increase in accounts payable of $7.1 million due to increased manufacturing production and timing of payments, an increase in other accruals of $3.6 million consisting primarily of an increase in deposits of $1.1 million from customer prepayments, and an increase in accrued payroll of $2.0 million from increased headcount and bonus accrual. There was also an increase in prepaid expenses and other assets of $6.1 million due to an increase in purchases of furnace construction and replacement parts for both the Illinois and Malaysia facilities, and an increase in inventory of $4.4 million, of which $1.7 million was attributed to an increase in the stock of raw material.

Cash flows provided by (used in) investing activities

The following table represents the major components of our cash flows from investing activities for the years ended December 31, 2012, 2011 and 2010:

	Year ended December 31,		
	2012	2011	2010
		(in millions)	
Purchases of property and equipment:			
Machinery and equipment for crystal growth	(5.1)	(28.0)	(14.9)
Land and building improvements	(2.4)	(5.9)	(25.8)
Increase capacity in other areas	(3.5)	(14.3)	(8.6)
Total purchases of property and equipment	(11.0)	(48.2)	(49.3)
Proceeds from sale of investments, net of purchases	29.0	15.5	(25.4)
Net cash provided by (used in) investing activities	$ 18.0	$(32.7)	$(74.7)

Net cash provided by investing activities was $18.0 million for the year ended December 31, 2012 and net cash used in investing activities was $32.7 million and $74.7 million for the years ended December 31, 2011 and 2010, respectively. In 2012, we used approximately $7.5 million to continue to complete and equip our crystal growth facility in Batavia, Illinois and approximately $3.5 million to increase capacity in other areas. This was offset by sales of investments (net of purchases of investments of $5.3 million) of $29.0 million. In 2011, we used approximately $33.9 million on expansion activities for building and equipment for our crystal growth facility in Batavia, Illinois. We used approximately $14.3 million to increase capacity for post crystal growth operations, of which $10.0 million was used for continued equipment installation in our facility in Penang, Malaysia. This was partially offset by sales of investments of $25.0 million used to fund operations, capital spending and to repurchase some of our capital stock. We purchased additional investments of $9.5 million using investment earnings proceeds. In 2010, we used approximately $49.3 million on expansion, including building and equipment for our new crystal growth facility in Batavia, Illinois, and building and equipping our new post crystal growth facility in Malaysia. We used proceeds from our common stock offering completed on June 21, 2010 of approximately $55.4 million to purchase investment securities. This was partially offset by sales of investments of $30.0 million which were used to fund operations and capital spending.

We have purchased land to construct a second crystal growth facility in Batavia, Illinois, but we have not yet determined when construction will begin. We anticipate spending on capital expenditures in 2013 to be between $10.0 and $15.0 million and will primarily be focused on investment in equipment to produce patterned sapphire substrates and enhance our polishing platform.

Cash flows provided by (used in) financing activities

Net cash provided by (used in) financing activities was $250,000, ($4.0) million and $62.8 million for the years ended December 31, 2012, 2011 and 2010, respectively. Net cash provided by financing activities in 2012 was primarily the result of excess tax benefits related to stock based compensation of $160,000 and proceeds from the exercise of stock options of $72,000. Net cash used in financing activities for 2011 reflects stock repurchases of $6.5 million, partially offset by excess tax benefits related to stock based compensation of $1.4 million and proceeds from the exercise of options of $742,000. Net cash provided by financing activities in 2010 reflects $61.7 million in net proceeds from the common stock offering completed June 21, 2010, as well as proceeds from the exercise of stock options of $1.6 million partially offset by an increase in restricted cash of $525,000.

Future liquidity requirements

We believe that our existing cash, cash equivalents, investments and anticipated cash flows from operating activities will be sufficient to meet our anticipated cash needs for at least the next twelve months. In addition, on

January 2, 2013, we signed an agreement with a bank to provide us with a $25.0 million senior secured credit facility. This facility will provide us with additional operating cash flow flexibility. Our cash needs include cash required to fund our operations, and the capital needed to fund our planned expansions in the U.S. and Asia and investments in new product development. If the assumptions underlying our business plan regarding future revenues and expenses change, or if unexpected opportunities or needs arise, we may seek to raise additional cash by selling equity or convertible debt securities. If we raise additional funds through the issuance of equity or convertible debt securities, the percentage ownership of our stockholders could be significantly diluted, and these newly-issued securities may have rights, preferences or privileges senior to those of existing stockholders. If we obtain additional debt financing or draw on our credit facility, a substantial portion of our operating cash flow may be dedicated to the payment of principal and interest on such indebtedness, and the terms of the debt securities issued could impose significant restrictions on our operations. If we are unable to obtain financing on terms favorable to us, we may be unable to successfully execute our business plan.

Contractual obligations

The contractual obligations presented in the table below represent our estimates of future payments under fixed contractual obligations and commitments at December 31, 2012. Changes in our business needs as well as actions by third parties and other factors may cause these estimates to change. Because these estimates are complex and necessarily subjective, our actual payments in future periods are likely to vary from those presented in the table. The following table sets forth information relating to our contractual obligations at December 31, 2012:

		Payments due in			
	Total	Less than 1 year	1-3 years	3-5 years	More than 5 years
		(in millions)			
Operating lease obligations	$2.3	$1.2	$ 1.1	$—	$—
Purchase order obligations	1.1	1.1	—	—	—
Total contractual obligations	$3.4	$2.3	$ 1.1	$—	$—

OFF-BALANCE SHEET ARRANGEMENTS

During 2012, 2011 and 2010, we did not engage in any off-balance sheet arrangements. We do not have any interest in entities referred to as variable interest entities, which includes special purpose entities and other structured finance entities.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

Market risk is the risk of loss related to changes in market prices, including interest rates, of financial instruments that may adversely impact our financial position, results of operations or cash flows.

Foreign currency exchange risk. As a result of our global operations, we are exposed to changes in foreign currency exchange rates which may adversely affect our results and financial position. Primary exposures are related to the U.S. Dollar versus the Malaysian Ringgit. While we continue to monitor this exchange risk, we are not currently entered into any foreign currency hedging transactions.

Interest rate risk. We do not have any long-term borrowings. Our investments consist of cash, cash equivalents, investment grade commercial paper, FDIC guaranteed certificates of deposits, common stock, corporate notes and government securities. The primary objective of our investment activities is to preserve principal while maximizing income without significantly increasing risk. We do not enter into investments for speculative purposes. Our investments are exposed to market risk due to a fluctuation in interest rates, which may affect our interest income and the fair market value of our investments. Due to the short-term nature of our

investment portfolio, we do not believe an immediate 10% increase or decrease in interest rates would have a material effect on the fair market value of our portfolio, and therefore, we do not expect our operating results or cash flows to be materially affected by a sudden change in market interest rates.

Inflation. Our operations have not been, and we do not expect them to be, materially affected by inflation. However, historically, the prices we charge our customers are market driven, and therefore, we may not be able to increase our prices to offset any increase in our material or labor costs. Our inability or failure to do so could harm our business, financial condition and results of operations.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of financial statements in accordance with accounting principles generally accepted in the U.S. requires us to make estimates, assumptions and judgments that affect the amounts reported in our financial statements and the accompanying notes. We base our estimates on historical experience and various other assumptions that we believe to be reasonable. Although these estimates are based on our present best knowledge of the future impact on the company of current events and actions, actual results may differ from these estimates, assumptions and judgments.

We consider to be critical those accounting policies that require our most subjective or complex judgments, which often result from a need to make estimates about the effect of matters that are inherently uncertain, and that are among the most important of our accounting policies in the portrayal of our financial condition and results of operations. We believe the following to be our critical accounting policies, including the more significant estimates and assumptions used in preparation of our financial statements.

Foreign currency translation and transactions. Rubicon Worldwide LLC's assets and liabilities are translated into U.S. dollars at exchange rates existing at the respective balance sheet dates and capital accounts at historical exchange rates. The results of operations are translated into U.S. dollars at the average exchange rates during the respective period. Translation adjustments resulting from fluctuations in exchange rates for Rubicon Worldwide LLC are recorded as a separate component of accumulated other comprehensive income (loss) within stockholders' equity.

We have determined that the functional currency of Rubicon Sapphire Technology (Malaysia) SDN BHD is the U.S. dollar. Rubicon Sapphire Technology (Malaysia) SDN BHD's assets and liabilities are translated into U.S. dollars using the remeasurement method. Non-monetary assets are translated at historical exchange rates and monetary assets are translated at exchange rates existing at the respective balance sheet dates. Translation adjustments for Rubicon Sapphire Technology (Malaysia) SDN BHD are included in determining net income (loss) for the period. The results of operations are translated into U.S. dollars at the average exchange rates during the respective period. We record these gains and losses in other income (expense).

Foreign currency transaction gains and losses are generated from the effects of exchange rate changes on transactions denominated in a currency other than our functional currency, which is the U.S. dollar. Gains and losses on foreign currency transactions are generally required to be recognized in the determination of net income (loss) for the period. We record these gains and losses in other income (expense).

Revenue recognition. We recognize revenue from sales of products and billings for costs and fees from government contracts. We recognize revenue from sales of products when:

- *Persuasive evidence of an arrangement exists.* We require evidence of a purchase order with the customer specifying the terms and specifications of the product to be delivered, typically in the form of a signed quotation or purchase order from the customer.
- *Title has passed and the product has been delivered.* Title passage and product delivery generally occur when the product is delivered to a common carrier.

- *The price is fixed or determinable.* All terms are fixed in the signed quotation or purchase order received from the customer. The purchase orders do not contain rights of cancellation, return, exchanges or refunds.
- *Collection of the resulting receivable is reasonably assured.* Our standard arrangement with customers includes payment terms. Customers are subject to a credit review process that evaluates each customer's financial position and its ability to pay. We determine collectability by considering the length of time the customer has been in business and our history of collections with that customer. If we determine that collection is not probable, no product is shipped and no revenue is recognized unless cash is received in advance.

In July 2012, we signed a contract with the Air Force Research Laboratory to produce large-area sapphire windows on a cost plus fixed fee basis. We recognize revenue from this contract in the period during which the related costs are incurred over the contractually defined period. Our current contract will be over a period of three years.

All of our revenue is denominated in U.S. dollars.

Inventory. We value our inventory at the lower of cost or market. Market is determined based on net realizable value. Costs for raw materials, work in process and finished goods are based on actual costs on a first-in, first-out basis. We establish inventory reserves when conditions exist that suggest inventory may be in excess of anticipated demand or is obsolete based on customer required specifications. We evaluate the ability to realize the value of our inventory based on a combination of factors, including forecasted sales, estimated current and future market value and changes in customers' product specifications. For the year ended December 31, 2012, we determined we had inventory that was excess or obsolete and recorded an adjustment which reduced inventory and increased costs of goods sold by $719,000. We have accepted sales orders for smaller diameter core material at prices lower than our cost. Based on these sales prices, we recorded at December 31, 2012 a lower of cost or market adjustment which reduced inventory and increased cost of goods sold by $1.5 million. Our method of estimating excess and obsolete inventory has remained consistent for all periods presented. However, if our recognition of excess or obsolete inventory is, or if our estimates of our inventory's potential utility become, less favorable than currently expected, additional inventory reserves may be required.

There is a high degree of volatility in the markets we serve with demand for our products constantly changing. Currently, larger diameter wafers are in greater demand than smaller diameter products. During the year ended December 31, 2012, we decided to recycle some boules from inventory that might have produced low six-inch yield and in that case would be used for smaller diameter products. Historically, boules put through a second growth cycle typically result in a very high-grade crystal which may result in higher yield of large diameter wafers. The recycling of boules reduced inventory and increased cost of goods sold for the year ended December 31, 2012 by $927,000.

We determine our normal operating capacity and record as expenses costs attributable to lower utilization of equipment and staff. For the year ended December 31, 2012, we determined we were not operating at capacity and recorded costs associated with the lower utilization of equipment and staff of $1.9 million. With the lower demand for certain products, we believe that it is likely that we will incur additional adjustments for lower utilization of equipment and staff in the first half of 2013.

We value our other inventory supplies at cost, based on the purchase prices on a first- in, first out-basis. Other inventory supplies include consumable items used in the manufacturing process as well as repair and maintenance items for our machinery and equipment.

Investments. We invest available cash primarily in investment grade commercial paper, FDIC guaranteed certificates of deposits, common stock, corporate notes and government securities. Investments classified as available-for-sale securities are carried at fair market value with unrealized gains and losses recorded in accumulated other comprehensive income (loss). Investments in trading securities are reported at fair value, with

both realized and unrealized gains and losses recorded in other income (expense), in the Consolidated Statements of Operations. Investments in which we have the ability and intent, if necessary, to liquidate in order to support our current operations are classified as short-term.

We review our available-for-sale securities investments at the end of each quarter for other-than-temporary declines in fair value based on the specific identification method. We consider various factors in determining whether an impairment is other-than-temporary, including the severity and duration of the impairment, changes in underlying credit ratings, forecasted recovery, our ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value and the probability that the scheduled cash payments will continue to be made. When we conclude that an other-than-temporary impairment has resulted, the difference between the fair value and carrying value is written off and recorded as a charge on the Consolidated Statement of Operations. As of December 31, 2012, no impairment was recorded.

Allowance for doubtful accounts. We estimate the allowance for doubtful accounts based on an assessment of the collectability of specific customer accounts. The determination of risk for collection is assessed on a customer-by-customer basis considering our historical experience and future orders with the customer, changes in payment patterns, and recent information we have about the current status of our accounts receivable balances. If we determine that a specific customer is a risk for collection, we provide a specific allowance for credit losses to reduce the net recognized receivable to the amount we reasonably believe will be collected. If a receivable is deemed uncollectible, and the account balance differs from the allowance provided, the specific amount is written off to bad debt expense. We believe that based on the customers to whom we sell and the nature of our agreements with them, our estimates are reasonable. Our method of estimating collectability has remained consistent for all periods presented and with past collections experience.

Stock-based compensation. We expense stock options based upon the fair market value on the date of grant. We use the Black-Scholes option pricing model to determine the fair value of stock options. The determination of the fair value of stock-based payment awards on the date of grant using an option-pricing model will be affected by assumptions regarding a number of complex and subjective variables. These variables include our expected stock volatility over the term of the awards, actual and projected employee stock option exercise behaviors, risk-free interest rates, forfeitures and expected dividends.

The expected term represents the weighted-average period that our stock options are expected to be outstanding and is based upon the vesting term of our options, a review of a peer group of companies, and expected exercise behavior. Until November 2007, we were operating as a private company, and as a result, we were unable to use our actual price volatility data. Therefore, we estimate the volatility of our common stock based on volatility of similar entities over the expected term of our stock options. We base the risk-free interest rate that we use in the option pricing model on U.S. Treasury zero-coupon issues with remaining terms similar to the expected term on the options. We do not anticipate paying any cash dividends in the foreseeable future and, therefore, use an expected dividend yield of zero in the option pricing model. We are required to estimate forfeitures at the time of grant and revise those estimates in subsequent periods if actual forfeitures differ from those estimates. The current forfeiture rate of 16.59% was based on our past history of forfeitures.

We allocate stock based compensation costs using a straight-line method which amortizes the fair value of each option on a straight-line basis over the service period. Based on the variables affecting the valuation of our common stock and the method used for allocating compensation costs, we recognized $2.0 million in stock-based compensation expense during the year ended December 31, 2012.

All option grants made during 2012 and 2011 were granted at an exercise price per share equal to the closing market price of our common stock on the day before the date of the grant. Therefore, there is no intrinsic value because the exercise price per share of each option was equal to the fair value of the common stock on the date of grant.

Based on the fair market value of the common stock at December 31, 2012 and 2011, there was no aggregate intrinsic value for options outstanding and exercisable. For more information on stock-based compensation, see Note 7 – Stock Incentive Plans to our Consolidated Financial Statements included in this Annual Report on Form 10-K.

Income tax valuation allowance. Evaluating the need for and amount of a valuation allowance for deferred tax assets often requires significant judgment and extensive analysis of all the positive and negative evidence available to determine whether all or some portion of the deferred tax assets will not be realized. A valuation allowance must be established for deferred tax assets when it is more likely than not (a probability level of more than 50 percent) that they will not be realized. In general, "realization" refers to the incremental benefit achieved through the reduction in future taxes payable or an increase in future taxes refundable from the deferred tax assets, assuming that the underlying deductible differences and carryforwards are the last items to enter into the determination of future taxable income. In determining our valuation allowance, we consider the source of taxable income including taxable income in prior carryback years, future reversals of existing temporary differences, the required use of tax planning strategies, and future taxable income exclusive of reversing temporary differences and carryforwards. During the year ended December 31, 2011, management concluded that based on the current level of sustainable profitability that generates taxable income, that it is more likely than not that our deferred tax assets will be realizable. With the release of the valuation allowance, federal and certain state and non-U.S. income taxes attributable to the fiscal year's pre-tax income were provided for in the period. The reversal of the valuation allowance favorably impacted our effective tax rate.

Accounting for uncertainty in income taxes We recognize the tax benefit from an uncertain tax position only if it is more likely than not the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. For the year ended December 31, 2012 and 2011, we recorded a liability of $1.0 million and $363,000, respectively for uncertain tax positions. We recognize interest and/or penalties related to income tax matters in income tax expense. For the year ended December 31, 2011 we accrued $11,000 for potential penalties related to income taxes. There were no interest or penalties related to income taxes that have been accrued or recognized as of and for the year ended December 31, 2012.

ITEM 8. CONSOLIDATED FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Our Consolidated Financial Statements, together with the related notes and the report of independent registered public accounting firm, are set forth on the pages indicated in Item 15 of this Annual Report on Form 10-K.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Management's Evaluation of Disclosure Controls and Procedures.

An evaluation was performed under the supervision and with the participation of our management, including our chief executive officer and chief financial officer (together, our "certifying officers"), of the effectiveness of the design and operation of our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended (the "Exchange Act")) as of the end of the year covered by this report. Disclosure controls and procedures are controls and other procedures designed to ensure that information required to be disclosed by us in our periodic reports filed with the SEC is recorded, processed, summarized and reported within the time periods specified by the SEC's rules and instructions for Form 10-K, and that the information is accumulated and communicated to our management, including the chief executive

officer and chief financial officer, as appropriate to allow timely decisions regarding required disclosure. Based on their evaluation, our certifying officers concluded that these disclosure controls and procedures were effective as of December 31, 2012.

Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Our internal control system was designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of the consolidated financial statements for external purposes in accordance with generally accepted accounting principles. Based on its evaluation, management concluded that our internal controls over financial reporting were effective as of December 31, 2012. As required under this Item 9A, the management's report titled "Management's Assessment of Control Over Financial Reporting" is set forth in "Item 8 – Consolidated Financial Statements and Supplementary Data" and is incorporated herein by reference.

Attestation Report of the Registered Public Accounting Firm

As required under this Item 9A, the auditor's attestation report titled "Report of Independent Registered Public Accounting Firm on Internal Control Over Financial Reporting" is set forth in "Item 8 – Consolidated Financial Statements and Supplementary Data" and is incorporated herein by reference.

Changes in Internal Controls over Financial Reporting

There have been no changes in our internal controls over financial reporting that occurred during the quarter ended December 31, 2012 that our certifying officers concluded materially affected, or are reasonably likely to materially affect, our internal controls over financial reporting.

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

The Information required by Items 401, 405, 407(d)(4) and 407(d)(5) of Regulation S-K will be included under the captions "Election of Directors," "Executive Officers," "Section 16(a) Beneficial Ownership Reporting Compliance" and "Audit Committee" in our proxy statement for our 2013 annual meeting of stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

We have adopted a Code of Ethics that applies to all of our employees, officers and directors. A copy of the Code of Ethics is available on our website at www.rubicon-es2.com, and any waiver from the Code of Ethics will be timely disclosed on the Company's website as will any amendments to the Code of Ethics.

ITEM 11. EXECUTIVE COMPENSATION

The information required by Item 402 of Regulation S-K will be included under the captions "Executive Compensation" and "Director Compensation" in our proxy statement for our 2013 annual meeting of stockholders and is incorporated by reference herein. The information required by Item 407(e)(4) and 407(e)(5) of Regulation S-K will be included under the captions "Compensation Committee Interlocks and Insider Participation" and "Compensation Committee Report" in our proxy statement for our 2013 annual meeting of stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

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

Securities Authorized for Issuance under Equity Compensation Plans

The following table represents securities authorized for issuance under our 2001 Equity Plan and our 2007 Stock Incentive Plan as of December 31, 2012.

Equity Compensation Plan Information

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights (a)	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights (b)	Number of Securities Remaining Available for Future Issuances Under the Equity Compensation Plans (Excluding Securities Reflected in Column(a)) (c)
Equity compensation plans approved by security holders(1)	2,117,110	$13.32	2,200,604

(1) Approved before our initial public offering.

The information required by Item 403 of Regulation S-K will be included under the caption "Security Ownership of Certain Beneficial Owners and Management and Related Shareholder Matters" in our proxy statement for our 2013 annual meeting of stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

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

The information required by Item 404 of Regulation S-K will be included under the caption "Certain Relationships and Related Person Transactions" in our proxy statement for our 2013 annual meeting of stockholders and is incorporated by reference herein. The information required by Item 407(a) of Regulation S-K will be included under the caption "Director Independence" in our proxy statement for our 2013 annual meeting of stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES

The information required by this Item will be included under the caption "Ratification of Selection of Independent Registered Public Accounting Firm" in our proxy statement for our 2013 annual meeting of stockholders and is incorporated by reference herein. If such proxy statement is not filed with the SEC within 120 days after the end of the fiscal year covered by this Form 10-K, an amendment to this Form 10-K shall be filed not later than the end of such 120-day period.

PART IV

ITEM 15. EXHIBITS AND CONSOLIDATED FINANCIAL STATEMENT SCHEDULES

(a) Financial statements. The following consolidated financial statements are filed as part of this Annual Report on Form 10-K.

(b) Exhibits. The exhibits filed or incorporated by reference as a part of this report are listed in the Index to Exhibits which appears following the signature page to this Annual Report on Form 10-K and are incorporated by reference.

(c) Financial statement schedules not listed above have been omitted because they are inapplicable, are not required under applicable provisions of Regulation S-X, or the information that would otherwise be included in such schedules is contained in the registrant's financial statements or accompanying notes.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized on March 14, 2013.

Rubicon Technology, Inc.

By /s/ Raja M. Parvez
Raja M. Parvez
President and Chief Executive Officer

KNOWN BY ALL MEN BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Raja M. Parvez and William F. Weissman, jointly and severally, his or her attorney-in-fact, with the power of substitution, for him or her in any and all capacities, to sign any amendments to this Annual Report on Form 10-K and to file the same, with exhibits thereto and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that each of said attorneys-in-fact, or his or her substitute or substitutes, may do or cause to be done by virtue hereof.

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities indicated on March 14, 2013.

Signature	Title
/s/ Raja M. Parvez Raja M. Parvez	Director, President and Chief Executive Officer (Principal Executive Officer)
/s/ William F. Weissman William F. Weissman	Chief Financial Officer (Principal Financial and Accounting Officer)
/s/ Don N. Aquilano Don N. Aquilano	Chairman of the Board of Directors
/s/ Donald R. Caldwell Donald R. Caldwell	Director
/s/ Michael E. Mikolajczyk Michael E. Mikolajczyk	Director
/s/ Raymond J. Spencer Raymond J. Spencer	Director

EXHIBIT INDEX

The Exhibits listed below are filed or incorporated by reference as part of this Annual Report on Form 10-K.

Exhibit No.	Description	Incorporation by Reference
3.1	Eighth Amended and Restated Certificate of Incorporation of Rubicon Technology, Inc.	Filed as Exhibit 3.1 to Amendment No. 2, filed on November 1, 2007, to the registrant's Registration Statement on Form S-1 (File No. 333-145880)
3.2	Amendment No. 1 to Eighth Amended and Restated Certificate of Incorporation of Rubicon Technology, Inc.	Filed as Appendix A to the registrant's Definitive Proxy Statement on Schedule 14A, filed on April 29, 2011 (File No. 1-33834)
3.3	Amended and Restated Bylaws of Rubicon Technology, Inc.	Filed as Exhibit 3.2 to Amendment No. 2, filed on November 1, 2007, to the registrant's Registration Statement on Form S-1 (File No. 333-145880)
4.1	Specimen Common Stock Certificate	Filed as Exhibit 4.1 to Amendment No. 3, filed on November 13, 2007, to the registrant's Registration Statement on Form S-1 (File No. 333-145880)
4.2	Fourth Amended and Restated Registration Rights Agreement, dated as of November 30, 2005	Filed as Exhibit 4.2 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
4.3	Warrant to Purchase Shares of Series B preferred stock between Rubicon Technology, Inc. and GATX Ventures, Inc., dated July 10, 2002 (1)	Filed as Exhibit 4.8 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
4.4	Warrant to Purchase Shares of Series B preferred stock between Rubicon Technology, Inc. and GATX Ventures, Inc., dated July 10, 2002 (2)	Filed as Exhibit 4.9 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
4.5	Form of Investor Warrant to Purchase Shares of Series E preferred stock	Filed as Exhibit 4.14 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.1*	Rubicon Technology, Inc. 2001 Equity Plan, dated as of August 2, 2001	Filed as Exhibit 10.1 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.1(a)*	Amendment No. 1 to the Rubicon Technology, Inc. 2001 Equity Plan, dated as of November 6, 2001	Filed as Exhibit 10.1(a) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.1(b)*	Amendment No. 2 to the Rubicon Technology, Inc. 2001 Equity Plan, dated as of May 21, 2002	Filed as Exhibit 10.1(b) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.1(c)*	Amendment No. 3 to the Rubicon Technology, Inc. 2001 Equity Plan, dated as of May 28, 2004	Filed as Exhibit 10.1(c) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.1(d)*	Amendment No. 4 to the Rubicon Technology, Inc. 2001 Equity Plan, dated as of December 6, 2004	Filed as Exhibit 10.1(d) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)

Exhibit No.	Description	Incorporation by Reference
10.1(e)*	Amendment No. 5 to the Rubicon Technology, Inc. 2001 Equity Plan, dated as of June 28, 2005	Filed as Exhibit 10.1(e) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.1(f)*	Amendment No. 6 to the Rubicon Technology, Inc. 2001 Equity Plan, dated as of November 30, 2005	Filed as Exhibit 10.1(f) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.1(g)*	Amendment No. 7 to the Rubicon Technology, Inc. 2001 Equity Plan, dated as of July 26, 2006	Filed as Exhibit 10.1(g) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.1(h)*	Rubicon Technology, Inc. 2001 Equity Plan Form of Notice of Stock Option Grant and Stock Option Agreement	Filed as Exhibit 10.1(h) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.2*	Rubicon Technology, Inc. 2007 Stock Incentive Plan, as amended and restated on March 23, 2011	Filed as Appendix B to the registrant's Definitive Proxy Statement on Schedule 14A, filed on April 29, 2011 (File No. 1-33834)
10.3*	Rubicon Technology, Inc. Management Incentive Bonus Plan, dated as of February 28, 2007	Filed as Exhibit 10.4 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.4*	Amendment No. 1 to Rubicon Technology, Inc. Management Incentive Bonus Plan, dated as of August 29, 2007	Filed as Exhibit 10.4(a) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.5*	Executive Employment Agreement, dated as of dated January 29, 2009, by and between Rubicon Technology, Inc. and Raja M. Parvez Executive Employment Agreement	Filed as Exhibit 10.5(b) to the registrant's Current Report on Form 8-K filed on December 3, 2009 (File No. 1-33834)
10.6*	Executive Employment Agreement, dated as of July 30, 2007, by and between Rubicon Technology, Inc. and William F. Weissman	Filed as Exhibit 10.8 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.7*	First Amendment to Executive Employment Agreement, dated as of January 29, 2009, by and between Rubicon Technology, Inc. and William F. Weissman	Filed as Exhibit 10.8(a) to the registrant's Current Report on Form 8-K filed on December 3, 2009 (File No. 1-33834)
10.8	Form of Post-IPO Change of Control Severance Agreement	Filed as Exhibit 10.10 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.9	Form of Indemnification Agreement	Filed as Exhibit 10.11 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.10	Commercial Lease, dated as of December 23, 2004, by and between Rubicon Technology, Inc. and Bartmanns, Perales & Dolter, LLC	Filed as Exhibit 10.12 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.11	Amendment to Commercial Lease, dated as of May 6, 2005, by and between Rubicon Technology, Inc. and Bartmanns, Perales & Dolter, LLC	Filed as Exhibit 10.12(a) to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)

Exhibit No.	Description	Incorporation by Reference
10.12	Industrial Building Lease, dated as of July 18, 2007, by and between Rubicon Technology, Inc. and Phillip J. Latoria, Jr.	Filed as Exhibit 10.14 to the registrant's Registration Statement on Form S-1, filed on October 11, 2007 (File No. 333-145880)
10.13+	Master Purchase Agreement dated as of February 3, 2012 by and between Rubicon Technology, Inc. and LG Innotek Co., Ltd.	Filed as Exhibit 10.1 to the registrant's Quarterly Report on Form 10-Q/A, filed on August 23, 2012 (File No. 1-33834)
10.14	Loan and Security Agreement by and between Rubicon Technology, Inc. and Silicon Valley Bank, dated as of January 2, 2013	Filed as Exhibit 10-K to the registrant's Current Report on Form 8-K , filed on January 3, 2013 (File No. 1-33834)
21.1	Subsidiaries of the Company	
23.1	Consent of Independent Registered Public Accounting Firm	
24.1	Power of Attorney (incorporated by reference to the signature page of this Annual Report on Form 10-K)	
31.1	Certification of Chief Executive Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2003	
31.2	Certification of Chief Financial Officer pursuant to Exchange Act Rules 13a-14(a) and 15d-14(a), as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2003	
32.1	Certifications of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2003	
101	The following financial information from the Company's Annual Report on Form 10-K for the year ended December 31, 2012 is formatted in eXtensible Business Reporting Language: (i) consolidated balance sheets as of December 31, 2012 and 2011; (ii) consolidated statements of operations for each of the three years in the period ended December 31, 2012; (iii) consolidated statements of comprehensive income for each of the three years in the period ended December 31, 2012; (iv) consolidated statements of cash flows for each of the three years in the period ended December 31, 2012; and (iv) notes to the consolidated financial statements.	

* Management contract or compensatory plan or arrangement of the Company.

\+ Confidential treatment has been requested and granted for certain provisions of this Exhibit pursuant to Rule 24b-2 promulgated under the Exchange Act.

Rubicon Technology, Inc.

INDEX TO FINANCIAL STATEMENTS

MANAGEMENT'S REPORT ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The financial statements were prepared by management, which is responsible for their integrity and objectivity and for establishing and maintaining adequate internal controls over financial reporting.

The Company's internal control over financial reporting is 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. The Company's internal control over financial reporting includes those policies and procedures that:

i. pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and disposition of the assets of the Company;

ii. provide reasonable assurance that transactions are recorded as necessary to permit preparation of consolidated 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

iii. 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 consolidated financial statements.

There are inherent limitations in the effectiveness of any internal control, including the possibility of human error and the circumvention or overriding of controls. Accordingly, even effective internal controls can provide only reasonable assurance with respect to the financial statement preparation. Further, because of changes in conditions, the effectiveness of internal controls may vary over time.

Management assessed the design and effectiveness of the Company's internal control over financial reporting as of December 31, 2012. In making this assessment, management used the criteria set forth in *Internal Control—Integrated Framework* by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

Based on management's assessment using those criteria, as of December 31, 2012, management concluded that the Company's internal controls over financial reporting were effective.

Grant Thornton LLP, independent registered public accounting firm, has audited the consolidated financial statements of the Company for the fiscal years ended December 31, 2012, 2011 and 2010 and the Company's internal control over financial reporting as of December 31, 2012. Their reports are presented on the following pages.

Rubicon Technology, Inc.
March 14, 2013

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Rubicon Technology, Inc.

We have audited the internal control over financial reporting of Rubicon Technology, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2012, based on criteria established in *Internal Control—Integrated Framework* 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, testing and evaluating the design and operating effectiveness of internal control based on the assessed risk, and 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, 2012, based on criteria established in *Internal Control—Integrated Framework* issued by COSO.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements of the Company as of and for the year ended December 31, 2012, and our report dated March 14, 2013 expressed an unqualified opinion on those financial statements.

/s/ GRANT THORNTON LLP

Chicago, Illinois
March 14, 2013

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Stockholders
Rubicon Technology, Inc.

We have audited the accompanying consolidated balance sheets of Rubicon Technology, Inc. (a Delaware corporation) and subsidiaries (the "Company") as of December 31, 2012 and 2011, and the related consolidated statements of operations, comprehensive income, changes in shareholders' equity, and cash flows for each of the three years in the period ended December 31, 2012. These financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We 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 Rubicon Technology, Inc. and subsidiaries as of December 31, 2012 and 2011, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2012 in conformity with accounting principles generally accepted in the United States of America.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2012, based on criteria established in *Internal Control—Integrated Framework* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated March 14, 2013 expressed an unqualified opinion.

/s/ GRANT THORNTON LLP

Chicago, Illinois
March 14, 2013

Rubicon Technology, Inc.

Consolidated Balance Sheets

	As of December 31,	
	2012	2011
	(in thousands, other than share data)	
Assets		
Cash and cash equivalents	$ 19,573	$ 4,290
Restricted cash	171	189
Short-term investments	24,361	50,528
Accounts receivable, net	10,992	30,655
Accounts receivable—related parties	1,677	1,989
Inventories	47,354	22,823
Other inventory supplies	15,813	17,613
Prepaid expenses and other current assets	2,353	4,491
Deferred tax assets	4,427	3,078
Total current assets	126,721	135,656
Property and equipment, net	119,850	120,931
Investments	—	2,000
Other assets	1,525	1,365
Total assets	$248,096	$259,952
Liabilities and stockholders' equity		
Accounts payable	$ 8,954	$ 12,831
Accrued payroll	1,006	1,578
Accrued and other current liabilities	1,436	1,570
Corporate income and franchise taxes	216	612
Advance payments	772	9
Total current liabilities	12,384	16,600
Deferred tax liability	10,326	15,121
Total liabilities	22,710	31,721
Commitments and contingencies (Note 9)		
Stockholders' equity		
Preferred stock, $0.001 par value, 5,000,000 undesignated shares authorized, no shares issued or outstanding	—	—
Common stock, $0.001 par value, 45,000,000 shares authorized; 24,327,140 and 24,289,723 shares issued; 22,552,296 and 22,514,879 shares outstanding	25	24
Additional paid-in capital	334,314	332,119
Treasury stock, at cost, 1,774,844	(12,148)	(12,148)
Accumulated other comprehensive income (loss)	447	(50)
Accumulated deficit	(97,252)	(91,714)
Total stockholders' equity	225,386	228,231
Total liabilities and stockholders' equity	$248,096	$259,952

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

Rubicon Technology, Inc.

Consolidated Statements of Operations

	Year ended December 31,		
	2012	2011	2010
	(in thousands, other than share and per share data)		
Revenue	$ 67,243	$ 134,000	$ 77,362
Cost of goods sold	67,283	64,365	36,205
Gross profit (loss)	(40)	69,635	41,157
Operating expenses:			
General and administrative	9,018	11,336	9,883
Sales and marketing	1,685	1,658	1,267
Research and development	2,274	1,806	1,079
Loss on disposal of assets	19	84	234
Income (loss) from operations	(13,036)	54,751	28,694
Other income (expense):			
Interest income	93	252	358
Realized gain (loss) on foreign currency translation	349	(370)	(20)
Realized gain on investments	8	—	8
Total other income (expense)	450	(118)	346
Income (loss) before income taxes	(12,586)	54,633	29,040
Income tax benefit (expense)	7,048	(16,574)	71
Net income (loss)	$ (5,538)	$ 38,059	$ 29,111
Net income (loss) per common share			
Basic	$ (0.25)	$ 1.67	$ 1.34
Diluted	$ (0.25)	$ 1.61	$ 1.28
Weighted average common shares outstanding used in computing net income (loss) per common share			
Basic	22,523,951	22,852,205	21,726,090
Diluted	22,523,951	23,596,162	22,790,896

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

Rubicon Technology, Inc.

Consolidated Statements of Comprehensive Income

	Year ended December 31,		
	2012	2011	2010
	(in thousands)		
Net income (loss)	$(5,538)	$38,059	$29,111
Other comprehensive income (loss):			
Unrealized gain (loss) on investments, net of taxes	505	(42)	(9)
Unrealized gain (loss) on currency translation	(8)	2	9
Other comprehensive income (loss)	497	(40)	—
Comprehensive income (loss)	$(5,041)	$38,019	$29,111

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

Rubicon Technology, Inc.

Consolidated Statements of Stockholders' Equity

	Common stock		Treasury Stock		Additional paid-in capital	Stockholders' equity		
	Shares	Amount	Shares	Amount		Accum Other Comp Inc.	Accum deficit	Total stockholders' equity
	(in thousands other than share data)							
Balance at December 31, 2009	21,482,558	$ 21	(1,249,975)	$ (5,661)	$261,974	$ (10)	$(158,884)	$ 97,440
Exercise of stock options	532,986	—	—	—	1,640	—	—	1,640
Stock-based compensation	—	—	—	—	2,252	—	—	2,252
Proceeds from secondary public offering net of issuance costs of $4,130	2,195,100	2	—	—	61,649	—	—	61,651
Unrealized loss on investments	—	—	—	—	—	(9)	—	(9)
Foreign currency translation adjustments	—	—	—	—	—	9	—	9
Net income	—	—	—	—	—	—	29,111	29,111
Balance at December 31, 2010	24,210,644	23	(1,249,975)	(5,661)	327,515	(10)	(129,773)	192,094
Exercise of stock options	71,355	1	—	—	741	—	—	742
Stock-based compensation	—	—	—	—	2,297	—	—	2,297
Excess tax benefit of stock based compensation	—	—	—	—	1,404	—	—	1,404
Stock issued to Board of Directors	7,724	—	—	—	162	—	—	162
Purchase of treasury stock, at cost	—	—	(524,869)	(6,487)	—	—	—	(6,487)
Foreign currency translation adjustments	—	—	—	—	—	2	—	2
Unrealized loss on investments, net of tax	—	—	—	—	—	(42)	—	(42)
Net income	—	—	—	—	—	—	38,059	38,059
Balance at December 31, 2011	24,289,723	24	(1,774,844)	(12,148)	332,119	(50)	(91,714)	228,231
Exercise of stock options	17,884	1	—	—	72	—	—	73
Net exercise of stock warrants	2,188	—	—	—	—	—	—	—
Stock-based compensation	—	—	—	—	1,801	—	—	1,801
Stock issued to Board of Directors	17,345	—	—	—	162	—	—	162
Excess tax benefit of stock based compensation	—	—	—	—	160	—	—	160
Foreign currency translation adjustments	—	—	—	—	—	(8)	—	(8)
Unrealized gain on investments, net of tax	—	—	—	—	—	505	—	505
Net loss	—	—	—	—	—	—	(5,538)	(5,538)
Balance at December 31, 2012	24,327,140	$ 25	(1,774,844)	$(12,148)	$334,314	$447	$ (97,252)	$225,386

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

Rubicon Technology, Inc.

Consolidated Statements of Cash Flows

	Year ended December 31,		
	2012	2011	2010
	(in thousands)		
Cash flows from operating activities			
Net income (loss)	$ (5,538)	$ 38,059	$ 29,111
Adjustments to reconcile net income (loss) to net cash (used in) provided by operating activities			
Depreciation and amortization	12,027	9,724	6,066
Net loss on disposal of assets	19	84	234
Stock-based compensation	1,801	2,297	2,252
Stock issued to Board of Directors	162	162	—
Realized gain on investments	(8)	—	(8)
Deferred taxes	(6,324)	13,447	—
Excess tax benefits from stock-based compensation	(160)	(1,404)	—
Changes in operating assets and liabilities:			
Accounts receivable	19,975	(13,968)	(13,709)
Inventories	(24,258)	(11,948)	(4,464)
Other inventory supplies	1,948	(9,929)	(5,646)
Prepaid expenses and other assets	1,981	(3,993)	(548)
Accounts payable	(4,004)	3,683	7,129
Accrued payroll	(581)	(951)	2,020
Corporate income and franchise taxes	(391)	212	236
Advance payments	763	(1,094)	1,076
Accrued and other current liabilities	(150)	231	310
Net cash (used in) provided by operating activities	(2,738)	24,612	24,059
Cash flows from investing activities			
Purchases of property and equipment	(10,975)	(48,228)	(49,429)
Proceeds from disposal of assets	10	—	143
Purchase of investments	(5,281)	(9,439)	(55,416)
Proceeds from sale of investments	34,300	25,000	30,000
Net cash provided by (used in) investing activities	18,054	(32,667)	(74,702)
Cash flows from financing activities			
Proceeds from issuance of common stock, net of issuance costs of $4,130	—	—	61,720
Proceeds from exercise of options	72	742	1,640
Restricted cash	18	344	(525)
Purchase of treasury stock	—	(6,487)	—
Excess tax benefits from stock-based compensation	160	1,404	—
Net cash provided by (used in) financing activities	250	(3,997)	62,835
Net effect of currency translation	(283)	269	21
Net increase (decrease) in cash and cash equivalents	15,283	(11,783)	12,213
Cash and cash equivalents, beginning of year	4,290	16,073	3,860
Cash and cash equivalents, end of year	$ 19,573	$ 4,290	$ 16,073
Supplemental disclosure of cash flow information			
Cash paid for income taxes	$ —	$ 6,050	$ —

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

1. SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Description of business

Rubicon Technology, Inc., a Delaware corporation (the "Company"), is an electronic materials provider that develops, manufactures and sells monocrystalline sapphire and other innovative crystalline products for LEDs, RFICs, blue laser diodes, optoelectronics and other optical applications. The Company sells its products on a global basis to customers in Asia, North America and Europe. The Company maintains its operating facilities in the Chicago metropolitan area and in Penang, Malaysia.

Principles of consolidation

The consolidated financial statements include the accounts of the Company and its wholly owned subsidiaries, Rubicon Worldwide LLC and Rubicon Sapphire Technology (Malaysia) SDN BHD. All intercompany transactions and balances have been eliminated in consolidation.

A summary of the Company's significant accounting policies applied in the preparation of the accompanying consolidated financial statements follows.

Cash and cash equivalents

The Company considers all unrestricted highly liquid investments immediately available to be cash equivalents. Cash equivalents primarily consist of time deposits with banks, unsettled trades and brokerage money market accounts.

Restricted cash

At December 31, 2012 and 2011, in connection with certain credit agreements, the Company is required to maintain $5,000 of restricted certificates of deposit. At December 31, 2012 and 2011, the Company held $2,600 and $1,700, respectively, of employee funds as part of a flexible spending program. At December 31, 2012 and 2011, the Company held $163,500 and $132,200, respectively, as a fixed deposit pledged to a bank as a security for a bank guarantee facility granted to the Company. At December 31, 2011, the Company also held $50,000 in escrow funds used for the future purchase of land in Batavia, Illinois.

Foreign currency translation and transactions

Rubicon Worldwide LLC's assets and liabilities are translated into U.S. dollars at exchange rates existing at the respective balance sheet dates and capital accounts at historical exchange rates. The results of operations are translated into U.S. dollars at the average exchange rates during the respective period. Translation adjustments resulting from fluctuations in exchange rates for Rubicon Worldwide LLC are recorded as a separate component of accumulated other comprehensive income (loss) within stockholders' equity.

The Company has determined that the functional currency of Rubicon Sapphire Technology (Malaysia) SDN BHD is the U.S. dollar. Rubicon Sapphire Technology (Malaysia) SDN BHD's assets and liabilities are translated into U.S. dollars using the remeasurement method. Non-monetary assets are translated at historical exchange rates and monetary assets are translated at exchange rates existing at the respective balance sheet dates. Translation adjustments for Rubicon Sapphire Technology (Malaysia) SDN BHD are included in determining net income (loss) for the period. The results of operations are translated into U.S. dollars at the average exchange rates during the respective period. The Company records these gains and losses in other income (expense).

Foreign currency transaction gains and losses are generated from the effects of exchange rate changes on transactions denominated in a currency other than the functional currency of the Company, which is the U.S. dollar. Gains and losses on foreign currency transactions are generally required to be recognized in the determination of net income (loss) for the period. The Company records these gains and losses in other income (expense).

Investments

The Company invests available cash primarily in investment grade commercial paper, FDIC guaranteed certificates of deposit, common stock, corporate notes and government securities. Investments classified as available-for-sale securities are carried at fair market value with unrealized gains and losses recorded in accumulated other comprehensive income (loss). Investments in trading securities are reported at fair value, with both realized and unrealized gains and losses recorded in other income (expense), in the consolidated statements of operations. Investments in which the Company has the ability and intent, if necessary, to liquidate in order to support its current operations, are classified as short-term.

The Company reviews its available-for-sale securities investments at the end of each quarter for other-than-temporary declines in fair value based on the specific identification method. The Company considers various factors in determining whether an impairment is other-than-temporary, including the severity and duration of the impairment, changes in underlying credit ratings, forecasted recovery, its ability and intent to hold the investment for a period of time sufficient to allow for any anticipated recovery in market value and the probability that the scheduled cash payments will continue to be made. When the Company concludes that an other-than-temporary impairment has resulted, the difference between the fair value and carrying value is written off and recorded as a charge on the consolidated statements of operations. As of December 31, 2012 and 2011, no impairment was recorded.

The Company's long-term investment was accounted for as a cost method investment and was adjusted as needed based on a review of the investment's financial position.

Treasury Stock

The Company records treasury stock purchases under the cost method whereby the entire cost of the acquired stock is recorded as treasury stock.

Accounts receivable

The majority of the Company's accounts receivable is due from manufacturers serving the LED and Silicon-on-Sapphire (SoS) industries. Credit is extended based on an evaluation of the customer's financial condition. Accounts receivable are due based on contract terms and at stated amounts due from customers, net of an allowance for doubtful accounts.

Accounts outstanding longer than the contractual payment terms are considered past due. The Company determines its allowance by considering a number of factors, including the length of time past due, the customer's current ability to pay and the condition of the general economy and industry as a whole. The Company writes off accounts receivable when they become uncollectible, and payments subsequently received on such receivables are recorded as a reduction to bad debt expense.

The following table shows the activity of the allowance for doubtful accounts:

	Year ended December 31,	
	2012	2011
	(in thousands)	
Beginning balance	$378	$ 194
Charges to costs and expenses	(54)	1,873
Accounts charged off, less recoveries	(38)	(1,689)
Ending balance	$286	$ 378

Inventories

Inventories are valued at the lower of cost or market. Cost is determined using the first-in, first-out method, and includes materials, labor and overhead. The Company reduces the carrying value of its inventories for differences between the cost and the estimated net realizable value, taking into account usage, expected demand, technological obsolescence and other information. Inventories are composed of the following:

	As of December 31,	
	2012	2011
	(in thousands)	
Raw materials	$21,267	$ 7,835
Work in progress	20,787	9,776
Finished goods	5,300	5,212
	$47,354	$22,823

The Company establishes inventory reserves when conditions exist that suggest inventory may be in excess of anticipated demand or is obsolete based on customer required specifications. The Company evaluates the ability to realize the value of our inventory based on a combination of factors, including forecasted sales, estimated current and future market value and changes in customers' product specifications. For the year ended December 31, 2012, the Company determined it had inventory that was excess or obsolete and recorded an adjustment which reduced inventory and increased costs of goods sold by $719,000. The Company has accepted sales orders for smaller diameter core products at prices lower than cost. Based on these sales prices, the Company recorded at December 31, 2012, a lower of cost or market adjustment which reduced inventory and increased cost of goods sold by $1.5 million. During the year ended December 31, 2012, the Company recycled some boules from inventory that might have produced lower than normal six-inch yield and in that case would be used for smaller diameter products. The recycling of boules reduced inventory and increased cost of goods sold for the year ended December 31, 2012 by $927,000. The Company's method of estimating excess and obsolete inventory has remained consistent for all periods presented.

Property and equipment

Property and equipment consisted of the following:

	As of December 31,	
	2012	2011
	(in thousands)	
Land and land improvements	$ 4,133	$ 2,540
Buildings	30,364	26,915
Machinery, equipment and tooling	103,477	98,276
Leasehold improvements	7,696	7,712
Furniture and fixtures	941	834
Information systems	1,070	954
Construction in progress	17,712	17,530
Total cost	165,393	154,761
Accumulated depreciation and amortization	(45,543)	(33,830)
Property and equipment, net	$119,850	$120,931

Property and equipment are carried at cost and depreciated over their estimated useful lives using the straight-line method. The cost of maintenance and repairs is charged to expense as incurred. Significant renewals and improvements are capitalized. Depreciation and amortization expense associated with property and equipment was $12.0 million, $9.7 million and $6.1 million for the years ended December 31, 2012, 2011 and 2010, respectively.

Construction in progress includes costs associated with the construction of furnaces and deposits made on equipment purchases.

The estimated useful lives are as follows:

Asset description	Life
Buildings	39 years
Machinery, equipment and tooling	3-10 years
Leasehold improvements	Lesser of life of lease or economic life
Furniture and fixtures	7 years
Information systems	3 years

Impairment of long-lived assets

When circumstances, such as adverse market conditions, indicate that the carrying value of a long-lived asset may be impaired, the Company performs an analysis to review the recoverability of the asset's carrying value. The Company makes estimates of the undiscounted cash flows (excluding interest charges) from the expected future operations of the asset. These estimates consider factors such as expected future operating income, operating trends and prospects, as well as the effects of demand, competition and other factors. If the analysis indicates that the carrying value is not recoverable from future cash flows, an impairment loss is recognized to the extent that the carrying value exceeds the estimated fair value. Any impairment losses are recorded as operating expenses, which reduce net income. There were no impairment losses on long lived assets for the years ended December 31, 2012, 2011 and 2010.

Other assets

The Company's other assets include overhaul costs that are accounted for using the deferral method in accordance with ASC 908-360, *"Airlines: Property, Plant and Equipment"*. These overhaul costs are recorded at cost on the balance sheet as other assets and are amortized over terms in accordance with their respectful useful lives.

Warranty cost

The Company's sales terms include a warranty that its products will meet certain specifications and is based on terms that are generally accepted in the marketplace. The Company records a current liability for the expected cost of warranty-related claims at the time of sale. The warranty reserve is included in accrued and other current liabilities on the consolidated balance sheets.

The following table presents changes in the Company's product warranty liability:

	Year ended December 31,	
	2012	2011
	(in thousands)	
Balance, beginning of period	$ 253	$ 98
Charged to cost of sales	(37)	241
Actual product warranty expenditures	(115)	(86)
Balance, end of period	$ 101	$253

Fair value of financial instruments

The Company's financial instruments consist primarily of cash and cash equivalents, short-term investments, accounts receivable, and accounts payable. The carrying values of these assets and liabilities approximate their fair values due to the short-term nature of these instruments at December 31, 2012 and 2011.

Concentration of credit risks and other risks and uncertainties

Financial instruments that could potentially subject the Company to concentrations of credit risk consist principally of cash and cash equivalents and accounts receivable. At December 31, 2012 and 2011, the Company had $6.9 million and $2.8 million, respectively, on deposit at a financial institution in excess of amounts insured by the Federal Deposit Insurance Corporation. The Company performs periodic evaluation of this institution for relative credit standing. The Company has not experienced any losses in such accounts and management believes it is not exposed to any significant risk of loss on these balances.

The Company currently depends on a small number of suppliers for certain raw materials, components, services and equipment, including key materials such as aluminum oxide and certain furnace components. If the supply of these components were to be disrupted or terminated, or if these suppliers were unable to supply the quantities of raw materials required, the Company may have difficulty in finding, or may be unable to find, alternative sources for these items. As a result, the Company may be unable to meet the demand for its products, which could have a material adverse impact on the Company.

Concentration of credit risk related to revenue and accounts receivable is discussed in Note 5.

Revenue recognition

Revenues recognized include product sales and billings for costs and fees for government contracts.

Product Sales

The Company recognizes revenue from product sales when earned. Revenue is recognized when, and if, evidence of an arrangement is obtained and the other criteria to support revenue recognition are met, including:

- *Persuasive evidence of an arrangement exists*. The Company requires evidence of a purchase order with the customer specifying the terms and specifications of the product to be delivered, typically in the form of a signed quotation or purchase order from the customer.
- *Title has passed and the product has been delivered*. Title passage and product delivery generally occur when the product is delivered to a common carrier.
- *The price is fixed or determinable*. All terms are fixed in the signed quotation or purchase order received from the customer. The purchase orders do not contain rights of cancellation, return, exchange or refund.
- *Collection of the resulting receivable is reasonably assured.* The Company's standard arrangement with customers includes payment terms. Customers are subject to a credit review process that evaluates each customer's financial position and its ability to pay. Collectability is determined by considering the length of time the customer has been in business and history of collections. If it is determined that collection is not probable, no product is shipped and no revenue is recognized unless cash is received in advance.

Government Contracts

The Company recognizes research and development revenue in the period during which the related costs are incurred over the contractually defined period. In July 2012, the Company signed a contract with the Air Force Research Laboratory to produce large-area sapphire windows on a cost plus fixed fee basis. The Company will record revenue on a gross basis as costs are incurred plus a portion of the fixed fee. For the year ended December 31, 2012, $1.2 million of revenue was recorded. The contract will continue for duration of three years and the total value of the contract is $4.7 million.

The Company does not provide maintenance or other services and it does not have sales that involve multiple elements or deliverables.

Shipping and handling costs

The Company records costs incurred in connection with shipping and handling of products as cost of goods sold. Amounts billed to customers in connection with these costs are included in revenue and are not material for any of the periods presented in the accompanying financial statements.

Sales tax

The Company collects and remits sales taxes on products sold to customers and reports such amounts under the net method in its consolidated statements of operations and records a liability until remitted to the respective tax authority.

Stock-based compensation

The Company requires all share-based payments to employees, including grants of employee stock options to be measured at fair value and expensed in the consolidated statements of operations over the service period (generally the vesting period) of the grant. Expense is recognized in the consolidated statements of operations for these share-based payments.

Research and development

Research and development costs are expensed as incurred. Research and development expense was $2.3 million, $1.8 million and $1.1 million for the years ended December 31, 2012, 2011 and 2010, respectively.

Accounting for uncertainty in income taxes

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the financial statements from such positions are then measured based on the largest benefit that has a greater than 50% likelihood of being realized upon settlement. The Company recognizes interest and/or penalties related to income tax matters in income tax expense. For the year ended December 31, 2011, the Company accrued $11,000 for potential penalties related to income taxes. There were no interest or penalties related to income taxes that have been accrued or recognized as of and for the years ended December 31, 2012 and 2010.

The Company is subject to taxation in the U.S., Japan and in a state jurisdiction. The Company is exempt from Malaysian income tax for a ten year period beginning in 2009. Due to the existence of net operating loss carryforwards, all tax years except December 31, 2007 are open to examination by tax authorities. All tax years in Malaysia are open to examination by tax authorities.

Income taxes

Deferred tax assets and liabilities are provided for temporary differences between financial reporting and income tax bases of assets and liabilities, and are measured using the enacted tax rates and laws expected to be in effect when the differences will reverse. Deferred income taxes also arise from the future benefits of net operating loss carryforwards. Valuation allowances are established when necessary to reduce deferred tax assets to the amounts expected to be realized. Full valuation allowances on net deferred tax assets are maintained until an appropriate level of profitability that generates taxable income is deemed sustainable or until a tax strategy is developed that would enable the Company to conclude that it is more likely than not that a portion of the deferred tax assets will be realizable. During the twelve months ended December 31, 2011, the Company concluded that based on the current level of sustainable profitability that generates taxable income, that it is more likely than not that the Company's deferred tax assets will be realizable. With the release of the valuation allowance, the Company began recording federal and certain state and non-U.S. income taxes attributable to the fiscal year's pre-tax income.

Use of estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from those estimates.

Other comprehensive income (loss)

Comprehensive income (loss) is defined as the change in equity of a business enterprise from transactions and other events from non-owner sources. Comprehensive income (loss) includes net earnings (loss) and other non-owner changes in equity that bypass the statement of operations and are reported in a separate component of equity. For the years ended December 31, 2012 and 2011 other comprehensive income (loss) includes the unrealized gain (loss) on investments and foreign currency translation adjustments. A summary of the components of comprehensive income (loss) for the years ended December 31, 2012 and 2011 follows:

	Year Ended December 31,	
	2012	2011
	(in thousands)	
Unrealized gain (loss) on investments, net of tax	457	(48)
Unrealized (loss) on currency translation	(10)	(2)
Ending Balance	$447	$(50)

Net income (loss) per common share

Basic net income (loss) per share is computed by dividing net income (loss) by the weighted average number of common shares outstanding during the period. Diluted net income (loss) per common share is computed by dividing net income (loss) by the weighted average number of diluted common shares outstanding during the period. Diluted shares outstanding are calculated by adding to the weighted shares outstanding any common stock equivalents, outstanding stock options and warrants based on the treasury stock method.

Diluted net loss per common share is the same as basic net loss per common share for the year ended December 31, 2012, because the effects of potentially dilutive securities are anti-dilutive.

The number of anti-dilutive shares excluded from the calculation of diluted net loss per share is as follows as of December 31:

	2012
Warrants	143,291
Stock options	266,020
	409,311

2. SEGMENT INFORMATION

The Company has determined that it operates in only one segment as it only reports profit and loss information on an aggregate basis to its chief operating decision maker.

Revenue is attributed by geographic region based on ship-to location of the Company's customers. The following table summarizes revenue by geographic region:

	Year Ended December 31,		
	2012	2011	2010
	(in thousands)		
Korea	$19,862	$ 51,461	$25,605
Australia	12,494	14	2
United States	11,104	12,253	6,520
France	8,482	359	69
Taiwan	5,663	50,006	31,914
China	3,839	3,877	1,084
Japan	2,999	11,362	10,745
Other	2,800	4,668	1,423
Revenue	$67,243	$134,000	$77,362

The following table summarizes sales by product type:

	Year Ended December 31,		
	2012	2011	2010
	(in thousands)		
Core	$ 9,755	$ 61,734	$54,198
As-Cut	59	31	38
As-Ground	9	—	141
Polished	50,474	65,468	19,245
Optical	5,720	6,751	3,680
Other	1,226	16	60
Revenue	$67,243	$134,000	$77,362

The following table summarizes assets by geographic region:

	As of December 31,	
	2012	2011
	(in thousands)	
United States	$210,781	$223,430
Malaysia	37,280	36,492
Japan	25	30
Taiwan	10	—
Total Assets	$248,096	$259,952

3. INVESTMENTS

The Company invests available cash primarily in investment grade commercial paper, corporate notes and government securities. The Company's short-term investments balance of $24.4 million as of December 31, 2012 is comprised of U.S. Treasury securities of $3.5 million, corporate notes and bonds of $4.6 million, commercial paper of $7.0 million, FDIC guaranteed certificates of deposit of $6.5 million and common stock of $2.8 million. The Company's investments are classified as available-for-sale securities and are carried at fair market value with unrealized gains and losses recorded in accumulated other comprehensive income (loss).

The Company's long-term investment at December 31, 2011 consisted of a $2.0 million investment in Peregrine Semiconductor, Corp. (a customer) Series D-1 Preferred shares and was accounted for as a cost method investment. In August 2012, that investment was converted to common stock which is currently held by the Company as a short term investment as of December 31, 2012.

The following table presents the amortized cost, and gross unrealized gains and losses on all securities at December 31, 2012:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
Short-term Investments:				
U.S. Treasury securities and agency	$ 3,509	$—	$—	$ 3,509
FDIC Guaranteed certificates of deposit	6,453	—	6	6,447
Common stock	2,000	806	—	2,806
Corporate Notes/Bonds	4,606	—	4	4,602
Commercial Paper	6,999	—	2	6,997
Total short-term investments	$23,567	$806	$ 12	$24,361

The following table presents the amortized cost, and gross unrealized gains and losses on all securities at December 31, 2011:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses	Fair Value
		(in thousands)		
Short-term Investments:				
U.S. Treasury securities and agency	$ 4,500	$—	$—	$ 4,500
Corporate Notes/Bonds	37,085	—	37	37,048
Commercial Paper	8,992	—	12	8,980
Total short-term investments	$50,577	$—	$ 49	$50,528
Long-term Investments:				
Peregrine Semiconductor, Corp. Series D-1 Preferred shares	$ 2,000	$—	$—	$ 2,000

The Company values its investments at fair value, defined as the price that would be received to sell an asset or paid to transfer a liability (an exit price) in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants on the measurement date. Valuation techniques used to measure fair value must maximize the use of observable inputs and minimize the use of unobservable inputs. The standard describes a fair value hierarchy based on three levels of inputs, of which the first two are considered observable and the last unobservable, that may be used to measure fair value which are the following:

- Level 1—Quoted prices in active markets for identical assets or liabilities.
- Level 2—Inputs other than Level 1 that are observable, either directly or indirectly, such as quoted prices for similar assets or liabilities; quoted prices in markets that are not active; or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities.
- Level 3—Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities.

The Company's fixed income available-for-sale securities consist of high-quality, investment grade commercial paper, FDIC guaranteed certificates of deposits, common stock, corporate notes and government securities. The Company values these securities based on pricing from pricing vendors, who may use quoted prices in active markets for identical assets (Level 1 inputs) or inputs other than quoted prices that are observable either directly or indirectly (Level 2 inputs) in determining fair value. The valuation techniques used to measure the fair value of the Company's financial instruments having Level 2 inputs were derived from non-binding market consensus prices that are corroborated by observable market data, quoted market prices for similar instruments, or pricing models, such as discounted cash flow techniques.

The following table summarizes the Company's financial assets measured at fair value on a recurring basis as of December 31, 2012:

	Level 1	Level 2	Level 3	Total
Cash Equivalents:				
Money market funds	$11,644	$ —	$—	$11,644
Investments:				
Available-for-sales securities—current:				
U.S. Treasury securities and agency	—	3,509	—	3,509
FDIC Guaranteed certificates of deposit	—	6,447	—	6,447
Common stock	2,806	—	—	2,806
Corporate notes/bonds	—	4,602	—	4,602
Commercial paper	—	6,997	—	6,997
Total	$14,450	$21,555	$—	$36,005

The following table summarizes the Company's financial assets measured at fair value on a recurring basis as of December 31, 2011:

	Level 1	Level 2	Level 3	Total
Cash Equivalents:				
Money market funds	$839	$ —	$—	$ 839
Investments:				
Available-for-sales securities— current:				
U.S. Treasury securities and agency	—	4,500	—	4,500
Corporate notes/bonds	—	37,048	—	37,048
Commercial paper	—	8,980	—	8,980
Total	$839	$50,528	$—	$51,367

In addition to the debt securities noted above, the Company had approximately $7.9 million and $3.5 million of time deposits included in cash and cash equivalents as of December 31, 2012 and 2011, respectively.

4. RELATED PARTY TRANSACTIONS

In November 2008, the Company purchased 1,345,444 shares of Peregrine Series D-1 Preferred shares for a total of $2.0 million, which represented less than 1% of shares outstanding. The terms and stock price of the purchase were the same as for the other investors who participated. Peregrine is a customer of the Company. On August 8, 2012, Peregrine completed its initial public offering, which resulted in a conversion of the preferred shares to common stock at a ratio of 7.34:1, or 183,303 shares of common stock. There is a lock out period until February, 2013 during which the Company cannot sell these shares. For the year ended December 31, 2012, the

Company recorded an unrealized gain on investments of $806,000 million. For years ended December 31, 2012, 2011 and 2010, revenue from Peregrine was $25.2 million, $5.2 million and $2.3 million, respectively. As of December 31, 2012 and 2011, accounts receivable from Peregrine were $1.7 million and $2.0 million, respectively. The pricing terms and conditions of the sales to Peregrine are similar to those available to the Company's other non-related customers.

5. SIGNIFICANT CUSTOMERS

For the year ended December 31, 2012, the Company had two customers that accounted for approximately 38% and 29% of its revenue. For the year ended December 31, 2011, the Company had three customers that accounted for approximately 38%, 19% and 12% of its revenue. For the year ended December 31, 2010, the Company had three customers that accounted for approximately 17%, 15% and 14% of its revenue.

Customers individually representing more than 10% of trade receivables accounted for approximately 93% and 89% of accounts receivable as of December 31, 2012 and 2011, respectively. The Company grants credit to customers based on an evaluation of their financial condition. Losses from credit sales are provided for in the financial statements.

6. STOCKHOLDERS' EQUITY

Common Stock

On June 22, 2011, the shareholders of the Company approved a reduction of the shares of common stock authorized with a par value of $0.001 by 40,000,000, from 85,000,000 to 45,000,000. As of December 31, 2012 the Company had reserved 2,117,110 shares of common stock for issuance upon the exercise of outstanding common stock options. Also, 2,200,604 shares of the Company's common stock were reserved for future grants of stock options (or other similar equity instruments) under the Company's 2007 Stock Incentive Plan (the "2007 Plan") as of December 31, 2012. In addition, 267,826 shares of the Company's common stock were reserved for future exercise of outstanding warrants as of December 31, 2012.

On June 21, 2010, the Company completed a public offering of common stock in which a total of 3,029,100 shares were sold at a price of $30.00 per share. The Company sold 2,195,100 shares of common stock, including 395,100 shares pursuant to the full exercise of the underwriter's over-allotment option, and certain stockholders of the Company sold 834,000 shares of common stock. The Company raised a total of $65.9 million in gross proceeds from the offering, or approximately $61.7 million in net proceeds after deducting the underwriting discount and commissions of $3.5 million and estimated other offering costs of approximately $712,000. The Company did not receive any of the proceeds from the sale of common stock by the selling stockholders.

Warrants

At December 31, 2012 and 2011, the Company had outstanding 267,826 warrants to purchase shares of common stock at an exercise price of $3.65 per share. The warrants were issued in conjunction with the issuance of convertible promissory notes issued by the Company to investors from August 2005 through October 2005. The warrants are immediately exercisable and expire 10 years from the date of issuance.

At December 31, 2011 the Company had outstanding 13,735 warrants to purchase shares of common stock at an exercise price of $7.28 per share. The warrants were issued in 2002 in conjunction with the procurement of loans. The warrants were immediately exercisable and expire 10 years from the date of issuance. During 2012, these warrants were exercised on a "net exercise" basis, resulting in the issuance of 2,188 shares of common stock to the warrant holders.

Treasury Stock

On August 4, 2011, the Company authorized a stock repurchase program to purchase up to $25.0 million of its common stock over a period of two years. The stock repurchase program authorizes the Company to repurchase its shares of common stock in the open market at times and prices considered appropriate by the Company depending upon prevailing market conditions and other corporate considerations. The treasury shares are accounted for using the cost method whereby the entire cost of the acquired stock is recorded as treasury stock. For the twelve months ended December 31, 2011, the Company repurchased 524,869 shares at an average price of $12.36 for $6.5 million. The Company did not repurchase any shares for the twelve months ended December 31, 2012.

7. STOCK INCENTIVE PLANS

The Company sponsored a stock option plan, the 2001 Equity Plan (the "2001 Plan"), which allowed for the granting of incentive and nonqualified stock options for the purchase of common stock. The maximum number of shares which could be awarded or sold under the 2001 Plan was 1,449,667 shares. Each option entitles the holder to purchase one share of common stock at the specified option exercise price. The exercise price of each incentive stock option granted must not be less than the fair market value on the grant date. At the discretion of management and with the approval of the Board of Directors, the Company granted options under the 2001 Plan. Management and the Board of Directors determined vesting periods and expiration dates at the time of the grant. On August 2, 2011, the plan expired.

In August 2007, the Company adopted the 2007 Plan, which allows for the grant of incentive stock options, non-statutory stock options, stock appreciation rights, restricted stock, restricted stock units, performance awards and bonus shares. On June 22, 2011, the stockholders of the Company approved an amendment to the 2007 Plan to increase the maximum number of shares that may be awarded or sold under the 2007 Plan by 2,100,000 from 2,307,692 to 4,407,692 shares. The Board of Directors has appointed a committee to administer the plan. The plan committee determines the type of award to be granted, the fair market value, the number of shares covered by the award, and the time when the award vests and may be exercised.

The following table summarizes the activity of the stock incentive and equity plans:

	Shares available for grant	Number of options outstanding	Weighted-average option exercise price	Number of restricted stock and board shares issued
Outstanding at December 31, 2009	874,269	2,194,286	$ 9.48	34,863
Granted	(238,826)	238,826	27.54	—
Exercised	—	(594,308)	5.86	—
Canceled/forfeited	8,407	(8,407)	16.63	—
Outstanding at December 31, 2010	643,850	1,830,397	12.98	34,863
Authorized	2,100,000	—	—	—
Granted	(389,774)	382,050	16.02	7,724
Exercised	—	(73,428)	10.78	—
Expired	(139,988)	—	—	—
Canceled/forfeited	45,911	(45,911)	20.15	—
Outstanding at December 31, 2011	2,259,999	2,093,108	13.45	42,587
Granted	(106,395)	89,050	9.72	17,345
Exercised	—	(17,885)	4.01	—
Canceled/forfeited	47,000	(47,163)	15.13	—
Outstanding at December 31, 2012	2,200,604	2,117,110	$13.32	59,932

The following table sets forth option grants made during 2012, 2011 and 2010 with intrinsic value calculated based on grant date fair value.

Date of Grant	Number of options granted	Exercise price	Intrinsic value per share
February 2010	7,500	15.00	—
March - April 2010	50,671	19.49 - 20.20	—
June - August 2010	145,655	24.95 - 32.67	—
October 2010	35,000	22.69	—
January 2011	26,000	18.80 - 21.64	—
March - April 2011	73,500	25.61 - 27.63	—
May 2011	51,650	22.92	—
July 2011	12,500	16,86	—
October 2011	75,400	10.81 - 10.93	—
December 2011	143,000	10.19	—
January 2012	8,500	9.39	—
April-May 2012	36,750	9.45 - 10.43	—
July 2012	7,000	10.20	—
September- October 2012	36,800	9.41 - 9.58	—

At December 31, 2012, the exercise prices of outstanding options were as follows:

Exercise Price	Number of options outstanding	Average remaining contractual life (years)	Number of options exercisable
$0.78 - $4.94	561,170	5.01	400,767
7.75 - 9.58	322,989	7.85	266,114
10.02 - 14.00	386,617	8.55	199,830
14.57 - 18.80	75,854	7.11	61,604
19.21 - 22.92	557,625	7.74	277,438
24.95 - 32.67	212,855	7.58	90,355
	2,117,110	7.18	1,296,108

The weighted average fair value of the options that became vested in the years ended 2012, 2011 and 2010 was $8.0 million, $3.9 million and $2.9 million, respectively.

The following table summarizes the activity of non-vested options as follows:

	Non-vested options	Weighted-Average Option Exercise price
Non-vested at December 31, 2009	1,500,640	$10.22
Granted	238,826	27.54
Vested	(391,788)	7.29
Cancelled	(8,292)	16.70
Non-vested at December 31, 2010	1,339,386	14.12
Granted	382,050	16.02
Vested	(366,484)	10.72
Cancelled	(41,775)	20.39
Non-vested at December 31, 2011	1,313,177	13.58
Granted	89,050	9.72
Vested	(540,050)	14.77
Cancelled	(41,175)	15.38
Non-vested at December 31, 2012	821,002	$15.24

The Company's aggregate intrinsic value is calculated as the difference between the exercise price of the underlying stock options and the fair value of the Company's common stock. Based on the fair market value of the common stock at December 31, 2012 and 2011, there was no aggregate intrinsic value for options outstanding and exercisable. At December 31, 2010, the intrinsic value for the options outstanding was $14.8 million and the intrinsic value for the options exercisable was $5.5 million. The Company uses the Black-Scholes option pricing model to value stock options. The Company uses historical stock prices of companies which it considers as a peer group as the basis for its volatility assumptions. The assumed risk-free rates were based on U.S. Treasury rates in effect at the time of grant with a term consistent with the expected option lives. The expected term is based upon the vesting term of the Company's options, a review of a peer group of companies, and expected exercise behavior. The forfeiture rate is based on past history of forfeited options. The expense is being allocated using the straight-line method. For the years ended December 31, 2012, 2011 and 2010, the Company recorded $1.8 million, $2.3 million and $2.1 million, respectively of stock option compensation expense. As of December 31, 2012, the Company has $3.1 million of total unrecognized compensation cost related to nonvested awards granted under the Company's stock-based plans that it expects to recognize over a weighted-average period of 2.14 years.

The Company continues to account for options issued prior to January 1, 2006 under the intrinsic value method.

The weighted average fair value per share of options granted for the fiscal year ended December 31, 2012 was $9.72 and the fair value of each option grant was estimated at the date of grant using the Black-Scholes option-pricing model using an expected term of 5.3 years, risk-free interest rate of .62%—1.04%, expected volatility of 52% and no dividend yield. The Company used an expected forfeiture rate of 16.59% in 2012.

The weighted average fair value per share of options granted for the fiscal year ended December 31, 2011 was $16.02 and the fair value of each option grant was estimated at the date of grant using the Black-Scholes option-pricing model using an expected term of 5.0 years, risk-free interest rate of .85%—2.24%, expected volatility of 51% and no dividend yield. The Company used an expected forfeiture rate of 24.53% in 2011.

The weighted average fair value per share of options granted for the fiscal year ended December 31, 2010 was $27.54 and the fair value of each option grant was estimated at the date of grant using the Black-Scholes option-pricing model using an expected term of 5.4 years, risk-free interest rate of 1.26%—2.60%, expected volatility of 60% and no dividend yield. The Company used an expected forfeiture rate of 27.54% in 2010.

An analysis of restricted stock issued is as follows:

Non-vested restricted stock as of December 31, 2010	1,762
Granted	7,724
Vested	(7,555)
Non-vested restricted stock as of December 31, 2011	1,931
Granted	17,345
Vested	(14,940)
Non-vested restricted stock as of December 31, 2012	4,336

For the years ended December 31, 2012, 2011 and 2010, the Company recorded $162,000, $165,000 and $153,000, respectively, of stock compensation expense related to restricted stock.

In 2009, the Board of Directors awarded stock options to purchase 300,000 shares of common stock to key executives at an exercise price of $19.21, the closing price of the shares on the date of the grant. Vesting of the options is subject to achievement of specified annual revenue and net earnings targets by December 31, 2012. The Company is recording stock compensation expense related to these options based on the probability of achieving the targets. At December 31, 2012 and 2011, one of these milestones was achieved and expense was recorded.

8. INCOME TAXES

Components of income before income taxes and the income tax provision are as follows:

Income (loss) before income taxes

	Year ended December 31,		
	2012	2011	2010
	(in thousands)		
U.S.	$(17,849)	$51,618	$28,799
Foreign	5,263	3,015	241
Total	$(12,586)	$54,633	$29,040

Income taxes

	Year ended December 31,		
	2012	2011	2010
	(in thousands)		
Current			
U.S.	$ (204)	$ 177	$ (79)
State	(357)	2,777	—
Foreign	(163)	173	8
Total current income tax expense (benefit)	(724)	3,127	(71)
Deferred			
U.S.	(5,536)	13,223	—
State	(1,049)	224	—
Foreign	261	—	—
Total deferred income tax expense	(6,324)	13,447	—
Total income tax expense (benefit)	$(7,048)	$16,574	$ (71)

The reconciliation of income tax computed at the federal statutory rate to income before taxes is as follows:

	Year ended December 31,		
	2012	2011	2010
U.S. Federal statutory rate	(34.0)%	35.0%	34.0%
State taxes net of federal benefit	(8.9)	5.2	5.3
Permanent differences	—	(0.6)	0.3
Foreign rate differential and transactional tax	(3.8)	(1.4)	3.2
Impact of foreign tax holiday	(10.4)	—	—
Valuation allowance	—	(5.9)	(41.4)
Other	1.1	(2.0)	(1.6)
	(56.0)%	30.3%	(0.2)%

Deferred income taxes reflect the net tax effects of the temporary differences between the carrying amount of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes.

Significant components of the Company's net deferred income taxes are as follows at December 31:

	2012	2011
	(in thousands)	
Deferred tax assets:		
Allowance for doubtful accounts	$ 115	$ 156
Inventory reserves	1,697	400
Accrued liabilities	316	260
Warrant interest expense	277	283
Charitable contributions	—	10
Stock compensation expense	2,503	2,083
State net operating loss—net of tax	1,524	984
Net operating loss carryforward	4,537	—
Tax credits	297	206
Total deferred tax assets	11,266	4,382
Deferred tax liability:		
Depreciation	(16,685)	(16,310)
Unrealized gain on securities held for sale	(340)	—
Prepaid expenses	(140)	(115)
Net deferred tax liability	$ (5,899)	$(12,043)

The Company's deferred income tax assets and liabilities were reported on the consolidated balance sheets as follows.

	2012	2011
	(in thousands)	
Current deferred income tax assets	$ 4,427	$ 3,078
Long term deferred income tax liabilities	(10,326)	(15,121)
Net deferred tax liability	$ (5,899)	$(12,043)

A valuation allowance to reduce the deferred tax assets is reported if, based on the weight of the evidence, it is more likely than not that some portion or all of the deferred tax assets will not be realized. During the twelve months ended December 31, 2011, the Company concluded that based on the current level of sustainable profitability that generates taxable income, that it is more likely than not that the Company's deferred tax assets will be realizable. The Company on June 30, 2011, recognized a tax benefit of $3.3 million to record current and long-term deferred tax assets and with the release of the valuation allowance began recording federal and certain state and non-U.S. income taxes attributable to the fiscal year's pre-tax income. At December 31, 2012, the Company had separate federal and Illinois net operating loss carryforwards of $37.6 million and $58.4 million, respectively, which begin to expire in 2026 and 2018, respectively. The Illinois State Legislature has suspended the full use of net operating loss carryforwards for taxable years ending after December 31, 2010 and before December 31, 2011, and has limited the net operation loss deduction to $100,000 for the years ending December 31, 2012 through December 31, 2013. In addition, at December 31, 2012, the Company had Illinois investment tax credits and research and development credits of $83,400 and $53,900, respectively scheduled to expire in 2017.

The Company has completed an analysis of the utilization of net operating losses subject to limits based upon certain ownership changes. The results of this analysis indicated no ownership change limiting the

utilization of net operating losses and tax credits. The results of a previous analysis indicated an ownership change limiting the utilization of net operating losses and tax credits. However, the unused prior year limitations allows the Company to fully utilize the net operating losses ("NOL") and tax credits in the current year. Additionally, the Company has not recorded a deferred tax asset NOL attributable to stock option exercises in the amount of $21.6 million for federal purposes and $26.0 million for state purposes because the Company cannot record these excess tax benefit stock option deductions until the benefit has been realized by actually reducing taxes payable.

The Company prescribes a recognition threshold and measurement attribute for the financial statement recognition and measurement of a tax position taken, or expected to be taken, in a tax return. The following is a reconciliation of the unrecognized tax benefits taken or expected to be taken in a tax return that have been recorded on the Company's financial statements for the years ended December 31, 2012.

	(in thousands)
Balance at December 31, 2010	$ —
Tax positions related to current year	159
Tax positions related to prior year	204
Balance at December 31, 2011	363
Decrease related to prior year	(363)
Tax positions related to current year	1,140
	$1,140

For the year ended December 31, 2011 the Company accrued $11,000 for potential penalties related to income taxes. There were no interest or penalties related to income taxes that have been accrued or recognized as of and for the years ended December 31, 2012 and 2010. Included in the balance of total unrecognized tax benefits at December 31, 2012, are potential benefits of $1.0 million that if recognized, would affect the effective tax rate in the year recognized.

The Company files income tax returns in the United States federal jurisdiction and in a state jurisdiction. During 2009, the Company began foreign operations in Malaysia and Japan and is subject to local income taxes in both jurisdictions. The Company is exempt from Malaysian income tax for a ten year period beginning in 2009. The impact of this tax holiday decreased foreign taxes for the years ended December 31, 2012, 2011 and 2010 by approximately $1.3 million, $535,000 and $54,000, respectively. The benefit of the tax holiday on net income per share (diluted) for the years ended December 31, 2012, 2011 and 2010 was $0.06, $0.02 and $0.00, respectively. All tax years in Malaysia are open to examination by tax authorities.

The Company's federal tax return for the periods ended December 31, 2010, 2008 and 2007 have been audited by the Internal Revenue Service (IRS) with no changes made to the Company's taxable losses for those years. The Company's state tax returns for the periods ended December 31, 2010 and 2009 have been audited by the Illinois Department of Revenue with no changes made to the Company's taxable losses for those years. Due to the existence of net operating loss carryforwards, all tax years except December 31, 2007 are open to examination by tax authorities.

U.S. income and foreign withholding taxes have not been provided on approximately $8.1 million of cumulative undistributed earnings of foreign subsidiaries. We intend to reinvest these earnings for the foreseeable future. If these amounts were distributed to the U.S., in the form of dividends or otherwise, we would be subject to additional U.S. income taxes, which could be material. Determination of the amount of

unrecognized deferred income tax liabilities on these earnings is not practicable because such liability, if any, is dependent on circumstances existing, if and when remittance occurs.

9. COMMITMENTS AND CONTINGENCIES

Operating Leases

The Company leases buildings used for manufacturing and offices. The leases provide for payment of the Company's proportionate share of operating expenses and real estate taxes.

Net rent expense under operating leases in 2012, 2011 and 2010 amounted to $1.4 million, $1.1 million and $1.2 million respectively.

Future minimum payments under all leases are as follows:

Year ending December 31,	Operating leases (in thousands)
2013	1,157
2014	926
2015	224

Purchase Commitments

The Company has entered into agreements to purchase equipment and components to construct furnaces. These agreements will result in the Company purchasing equipment or components for a total cost of approximately $1.1 million with deliveries occurring throughout 2013.

Litigation

From time to time, the Company experiences routine litigation in the normal course of its business. The management of the Company does not believe any pending litigation will have a material adverse effect on the financial condition or results of operations of the Company.

10. BENEFIT PLAN

The Company sponsors a 401(k) savings plan (the "Plan"). Employees are eligible to participate in the Plan upon reaching 21 years of age. Employees make contributions to the Plan through payroll deferrals and employer matching contributions are discretionary. There were no employer matching contributions for the years ended December 31, 2012, 2011 and 2010.

11. SUBSEQUENT EVENT

On January 2, 2013, the Company entered into a three year term agreement with a bank to provide the Company with a senior secured credit facility of $25.0 million. The agreement provides for the Company to borrow up to 80% of eligible accounts receivable and up to 35% for domestically held raw material and finished goods inventory. Advances against inventory are limited to 40% of the aggregate outstanding on the revolving line of credit and $10.0 million in aggregate. The Company has the option to borrow at an interest rate of LIBOR plus 2.75% or the Wall Street Journal prime rate prime rate plus 0.50%. If the Company maintains liquidity of $20.0 million or greater with the lending institution, then the borrowing interest rate options are LIBOR plus 2.25% or the Wall Street Journal prime rate. Unused revolving line facility fee is 0.375% per annum. The facility

is secured by a first priority interest in substantially all of the Company's personal property, excluding intellectual property. The Company is required to maintain an adjusted quick ratio of 1.40 to 1.00, maintain operating and other deposit accounts with the bank or bank's affiliates of 25% of the Company's total worldwide cash, securities and investments, and the Company can pay dividends or repurchase capital stock only with the bank's consent during the three year term.

12. QUARTERLY FINANCIAL DATA (Unaudited)

Quarterly Financial Data (Unaudited)

Summary quarterly results for the two years ended December 31, 2012 are as follows (in thousands, other than share and per share data):

	Three Months Ended				
2012	**March 31**	**June 30**	**September 30**	**December 31**	**Full Year**
Revenue	$ 10,207	$ 17,003	$ 19,942	$ 20,091	$ 67,243
Gross profit (loss)	$ (3,408)	$ 11	$ 2,445	$ 912	$ (40)
Income (loss) from operations	$ (6,646)	$ (3,098)	$ (1,141)	$ (2,151)	$ (13,036)
Income (loss) before income taxes	$ (6,271)	$ (3,386)	$ (844)	$ (2,085)	$ (12,586)
Net income (loss)	$ (3,367)	$ (1,312)	$ 272	$ (1,131)	$ (5,538)
Basic income (loss) per common share	$ (0.15)	$ (0.06)	$ 0.01	$ (0.05)	$ (0.25)
Diluted income (loss) per common share	$ (0.15)	$ (0.06)	$ 0.01	$ (0.05)	$ (0.25)
Weighted average common shares outstanding used in computing net income per common share:					
Basic	22,514,539	22,518,364	22,524,611	22,538,292	22,523,951
Diluted	22,514,539	22,518,364	23,050,618	22,538,292	22,523,951

	Three Months Ended				
2011	**March 31**	**June 30**	**September 30**	**December 31**	**Full Year**
Revenue	$ 37,970	$ 43,028	$ 33,637	$ 19,365	$ 134,000
Gross profit	$ 23,975	$ 27,200	$ 16,121	$ 2,339	$ 69,635
Income from operations	$ 20,250	$ 23,339	$ 11,885	$ (723)	$ 54,751
Income before income taxes	$ 20,331	$ 23,403	$ 11,775	$ (876)	$ 54,633
Net income	$ 19,104	$ 9,908	$ 8,186	$ 861	$ 38,059
Basic income per common share	$ 0.83	$ 0.43	$ 0.36	$ 0.04	$ 1.67
Diluted income per common share	$ 0.80	$ 0.41	$ 0.35	$ 0.04	$ 1.61
Weighted average common shares outstanding used in computing net income per common share:					
Basic	22,993,614	23,031,039	22,822,286	22,561,883	22,852,205
Diluted	23,943,644	23,928,408	23,410,525	23,102,072	23,596,162

Exhibit 21.1

Rubicon Technologies, Inc.
Subsidiaries of the Company

Name of Subsidiary	State (or other jurisdiction of incorporation)
Rubicon Worldwide LLC	Illinois
Rubicon Sapphire Technology (Malaysia) SDN BHD	Malaysia

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

We have issued our reports dated March 14, 2013, with respect to the consolidated financial statements, and internal control over financial reporting included in the Annual Report of Rubicon Technology, Inc. on Form 10-K for the year ended December 31, 2012. We hereby consent to the incorporation by reference of said reports in the Registration Statements of Rubicon Technology, Inc. on Form S-3 (File No. 333-167272, effective June 4, 2010), on Form S-3MEF (File No. 333-167535, effective June 16, 2010), and on Forms S-8 (File No. 333-147552, effective November 20, 2007 and File No. 333-180211, effective March 19, 2012).

/s/ GRANT THORNTON LLP

Chicago, Illinois
March 14, 2013

EXHIBIT 31.1

Certifications

Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Raja M. Parvez, certify that:

1. I have reviewed this Annual Report on Form 10-K of Rubicon Technology, Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of the annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 14, 2013

By: /s/ Raja M. Parvez

Raja M. Parvez
President and Chief Executive Officer

EXHIBIT 31.2

Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, William F. Weissman, certify that:

1. I have reviewed this Annual Report on Form 10-K of Rubicon Technology, Inc. (the "registrant");

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a) designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b) designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d) disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of the annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of registrant's board of directors (or persons performing the equivalent functions):

   a) all significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b) any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 14, 2013

By: /s/ William F. Weissman
William F. Weissman
Chief Financial Officer

EXHIBIT 32.1

Certification Pursuant to Section 906 of The Sarbanes-Oxley Act of 2002,
18 U.S.C. Section 1350

In connection with the Annual Report of Rubicon Technology, Inc. (the "Company") on Form 10-K for the year ended December 31, 2012 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Raja M. Parvez, President and Chief Executive Officer of the Company, and I, William F. Weissman, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: March 14, 2013

By: /s/ Raja M. Parvez
Raja M. Parvez
President and Chief Executive Officer

Date: March 14, 2013

By: /s/ William F. Weissman
William F. Weissman
Chief Financial Officer

A signed original of this written statement required by Section 906 has been provided to the registrant and will be retained by the registrant and furnished to the Securities and Exchange Commission or its staff upon request.

Corporate Information

Directors

Don Aquilano
Chairman of the Board
Rubicon Technology, Inc.
Managing Director and President
Allos Ventures, a venture capital firm

Donald R. Caldwell
Chairman and Chief Executive Officer
Cross Atlantic Capital Partners, Inc.,
a venture capital fund manager

Michael Mikolajczyk
Managing Director
Catalyst Capital Management, LLC,
a private equity firm

Raymond J. Spencer
Chairman, South Australia Economic Development Board and former chairman, Financial Services Strategic Business Unit of Capgemini SA, a provider of consulting, technology and outsourcing services

Raja M. Parvez
President and Chief Executive Officer
Rubicon Technology, Inc.

Audit Committee

Mikolajczyk, Aquilano, Spencer

Compensation Committee

Caldwell, Mikolajczyk, Spencer

Nominating and Governance Committee

Spencer, Aquilano, Caldwell

Executive Officers

Raja M. Parvez
President and Chief Executive Officer

William F. Weissman
Chief Financial Officer

Transfer Agent

American Stock Transfer &
Trust Company, LLC
6201 15th Avenue
Brooklyn, NY 11219
1-800-937-5449

Independent Registered Public Accounting Firm

Grant Thornton LLP
175 W. Jackson Blvd., 20th Floor
Chicago, IL 60604

To Request an Annual Report or Form 10-K

Additional copies of this Annual Report or the Company's Form 10-K filed with the Securities and Exchange Commission are available, without charge, upon request by contacting Investor Relations at the address or phone number listed below.

Common Stock Information

The Company's common stock is listed on the NASDAQ Global Market. Trading of the Company's common stock began on November 16, 2007 under the symbol RBCN. As of April 29, 2013, there were approximately 27 record holders of the Company's common stock.

Dividends

The Company has never declared or paid cash dividends on its common stock. The Company intends to retain future earnings to finance the growth and development of its business, and does not anticipate declaring or paying any cash dividends in the foreseeable future.

Common Stock Performance

Fiscal 2011	High	Low
1st Quarter	$28.74	$17.65
2nd Quarter	$29.79	$15.51
3rd Quarter	$18.28	$10.50
4th Quarter	$12.82	$ 8.23
Fiscal 2012	**High**	**Low**
1st Quarter	$13.59	$ 8.20
2nd Quarter	$10.92	$ 8.46
3rd Quarter	$11.57	$ 8.28
4th Quarter	$ 9.96	$ 5.82

Executive Offices

900 E. Green Street, Unit A
Bensenville, IL 60106
Phone: 847-295-7000
Fax: 847-233-0177

Annual Meeting

June 26, 2013
8:00 A.M. CDT
The Herrington Inn
15 South River Lane
Geneva, IL 60134

Legal Counsel

McGuire Woods LLP
77 West Wacker Drive
Suite 4100
Chicago, IL 60601

Investor Relations

Requests for information should be directed to:

Dee Johnson
Vice President, Investor Relations
Rubicon Technology
900 E. Green Street, Unit A
Bensenville, IL 60106
Phone 847-457-3426

For More Information

For additional information, please visit our website at www.rubicon-es2.com.

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