LUNA INNOVATIONS INC
Form 10-K
March 31, 2011
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

WASHINGTON, D.C. 20549

FORM 10-K

(MARK ONE)

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

FOR THE FISCAL YEAR ENDED DECEMBER 31, 2010

OR

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

FOR THE TRANSITION PERIOD FROM TO

COMMISSION FILE NUMBER 000-52008

LUNA INNOVATIONS INCORPORATED

(Exact name of Registrant as Specified in its Charter)

Delaware	**54-1560050**
(State or Other Jurisdiction of Incorporation or Organization)	***(I.R.S. Employer Identification Number)***

1 Riverside Circle, Suite 400

Roanoke, VA 24016

(Address of Principal Executive Offices)

(540) 769-8400

(Registrant s Telephone Number, Including Area Code)

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

Title of Each Class	Name of Each Exchange on which Registered
Common Stock, par value $0.001 per share	The NASDAQ Stock Market, LLC

Securities registered pursuant to Section 12(g) of the Act: None

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

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

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 x No ¨

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T 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 ¨ (Do not check if a smaller reporting company)	Smaller reporting company x

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates of the registrant on June 30, 2010, based upon the closing price of Common Stock on such date as reported by the NASDAQ Global Market, was approximately $17.7 million.

Indicate by check mark whether the registrant has filed all documents and reports required to be filed by Section 12, 13 or 15(d) of the Securities Exchange Act of 1934 subsequent to the distribution of securities under a plan confirmed by a court. Yes x No ¨

Indicate the number of shares outstanding of each of the issuer s classes of common stock, as of the latest practicable date: As of March 23, 2011 there were 13,499,496 shares of the registrant s common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Specified portions of the registrant s Proxy Statement with respect to its 2011 Annual Meeting of stockholders, anticipated to be filed within 120 days after the end of its fiscal year ended December 31, 2010, are incorporated by reference into Part III of this annual report on Form 10-K.

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LUNA INNOVATIONS INCORPORATED

ANNUAL REPORT ON FORM 10-K

FOR THE YEAR ENDED DECEMBER 31, 2010

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CAUTIONARY NOTE REGARDING FORWARD LOOKING STATEMENTS

This Annual Report on Form 10-K, including the Management s Discussion and Analysis of Financial Condition and Results of Operation section in Item 7 of this report, and other materials accompanying this Annual Report on Form 10-K contain forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended, and Section 27A of the Securities Act of 1933, as amended. All statements other than statements of historical facts are forward-looking statements for purposes of these provisions, including those relating to future events or our future financial performance. In some cases, you can identify these forward- looking statements by words such as intends, will, plans, anticipates, expects, may, might, estimates, believes, should, projects, predicts, potential or continue, or the negative of those words and other comparable words, and other words or terms of similar meaning in connection with any discussion of future operating or financial performance. Similarly, statements that describe our business strategy, goals, prospects, opportunities, outlook, objectives, plans or intentions are also forward-looking statements. These statements are only predictions and may relate to, but are not limited to, expectations of future operating results or financial performance, capital expenditures, introduction of new products, regulatory compliance, plans for growth and future operations, as well as assumptions relating to the foregoing.

These statements are based on current expectations and assumptions regarding future events and business performance and involve known and unknown risks, uncertainties and other factors that may cause actual events or results to be materially different from any future events or results expressed or implied by these statements. These factors include those set forth in the following discussion and within Item 1A Risk Factors of this Annual Report on Form 10-K and elsewhere within this report.

You should not place undue reliance on these forward-looking statements, which apply only as of the date of this Annual Report on Form 10-K. You should carefully review the risk factors described in other documents that we file from time to time with the U.S. Securities and Exchange Commission, or SEC. Except as required by applicable law, including the rules and regulations of the SEC, we do not plan to publicly update or revise any forward-looking statements, whether as a result of any new information, future events or otherwise, other than through the filing of periodic reports in accordance with the Securities Exchange Act of 1934, as amended.

PART I

ITEM 1. BUSINESS

Company Overview and Business Model

We research, develop and commercialize innovative technologies in three primary areas of focus:

- Test & measurement, sensing, and instrumentation products;
- Secure computing and communications; and
- Healthcare products.

Our business model is designed to accelerate the process of bringing new and innovative products to market. We use our in-house technical expertise across a range of technologies to perform applied research services for companies and government-funded projects. We continue to invest in product development and commercialization, which we anticipate will lead to increased product sales growth.

We are organized into two main business segments, our Technology Development segment and our Products and Licensing segment. Our Technology Development segment, which includes our secure computing and communications group, or SCC, performs applied research for government funded projects and comprised approximately 72%, 73% and 65% of our total revenues for the years ended December 31, 2008, 2009, and 2010,

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respectively. Most of the government funding in the part of our Technology Development segment outside of SCC is derived from the Small Business Innovation Research, or SBIR, program coordinated by the U.S. Small Business Administration, or SBA. Our SBIR research is focused on technological areas with commercial potential and we strive to commercialize any resulting scientific advancements. Our SCC group provides innovative solutions designed to secure critical technologies within the U.S. government. SCC both conducts applied research and provides services to the government in this area, with its revenues primarily derived from non-SBIR U.S. government contracts and purchase orders. For the year ended December 31, 2010, approximately 40% of our revenues were generated under the SBIR program, compared to 42% in 2009 and 44% in 2008. Our Technology Development segment also performs applied research in the areas of sensing and materials.

Our Products and Licensing segment focuses on fiber optic test and measurement, sensing, and instrumentation products and also conducts applied research in the fiber optic sensing area for both corporate and government customers. The Products and Licensing segment also commercializes healthcare products. Our Products and Licensing revenues represented approximately 28%, 27% and 35% of our total revenues for the years ended December 31, 2008, 2009 and 2010, respectively.

Products and Licensing

Our Products and Licensing segment includes approximately 35 full-time employees. Our primary product lines and development services in this segment are described in more detail below.

Test & Measurement, Sensing, and Instrumentation Products

Test and Measurement Equipment for Fiber Optic Components and Sub-Assemblies

Our test and measurement products monitor the integrity of fiber optic network components and sub-assemblies. These products are designed for manufacturers and suppliers of optical components and sub-assemblies and allow them to reduce development, test and production costs and improve the quality of their products. Most manufacturers and suppliers of optical components and modules currently use a combination of different types of optical test equipment to identify and measure failures in optical networks, such as bad splices, bends, crimps and other reflective and non-reflective events that can cause defects and negatively impact product performance. Our optical test equipment products replace the need to employ multiple test products because they address all stages of the end user s product development lifecycle, including design verification, component qualification, assembly process verification and failure analysis.

Our product lines in the test and measurement domain include our Optical Vector Analyzer, or OVA, our Optical Backscatter Reflectometer, or OBR, and the Phoenix family of tunable lasers.

Our OVA platform allows manufacturers and suppliers of optical components and sub-assemblies to reduce development, test and production costs and time-to-market by replacing multiple, time consuming and expensive measurement platforms with a single, integrated and easy-to-use instrument.

Our OBR is a highly sensitive diagnostic device that allows data and telecommunications companies and the service providers who maintain their own fiber optic networks to reduce test time and improve product quality. Our OBR provides the ability to inspect metropolitan fiber networks with higher resolution and better sensitivity than is possible with existing test products. Its user-friendly graphical user interface also makes the OBR product suitable for both research and manufacturing applications. The OBR gives end users a very high resolution view that is similar to an X-Ray into the inner workings of a fiber optic network. The OBR also has a feature that allows users to turn standard optical fiber into a continuous thermometer that could be used in a variety of temperature measurement and monitoring applications including power generation, civil structure monitoring, industrial process control, component-level heating in optical amplifiers, strain and load distribution in aircraft harnesses and temperature monitoring inside telecommunications cabinets and enclosures. We believe there are

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sales opportunities beyond our current customers in the telecommunications industry and that we can increase sales of our optical test equipment products by expanding our customer base to include customers in avionics, defense and academic research laboratories.

We have acquired the rights to manufacture a line of swept tunable lasers to allow us to compete more effectively in our existing fiber optic test and measurement as well as sensing markets. This laser is in production, and this technology is being integrated into current and new products to help us provide our customers with faster, more flexible and cost-effective test and measurement products. The laser is unique in the quality of the laser light produced, the speed at which it can operate, the small size of the package, and the environmental conditions in which it can operate. We believe that these traits make it possible for us to move our distributed sensing capabilities out of the laboratory, and into more demanding environments such as aircraft, operating rooms, and challenging industrial conditions. We are, therefore, using this technology to pursue business opportunities in new markets such as industrial and medical sensing.

Integrated Sensing

We have significant expertise in distributed sensing systems, or DSS, which are products composed of multiple sensors whose inputs are integrated through a fiber optic network and software. Our DSS products use fiber optic sensing technology with an innovative monitoring system that allows several thousand sensors to be networked along a single optical fiber. Potential key applications and markets include:

Distributed Strain. Potential markets for our DSS products include the airframe industry, integrated structural monitoring on civil structures and space applications. For example, a major airframe manufacturer has deployed our DSS products during fatigue testing to measure strain through a network of sensors distributed throughout an aircraft.

Distributed Temperature. Our DSS product also enables the direct monitoring of temperature. Potential markets include industrial process control and electrical system monitoring. For example, we have sold a network of distributed temperature sensors to a major manufacturer of electrical generators who uses our sensors to increase operational efficiency and prolong generator life. We have also sold our DSS temperature sensors to NASA for both ultra-cold and extremely high-temperature measurements.

Distributed Shape. A derivation of our distributed strain measurement technology is being utilized to enable three-dimensional shape and position measurement. We are developing this technology for use in robotic tethers, flexible structures used by the U.S. Navy for undersea systems, and other applications. We have also previously sold shape-sensing probes to a major aircraft manufacturer for measuring shape on an aerodynamic surface.

Sales & Marketing

We market our test & measurement, sensing and instrumentation products to telecommunications companies, defense agencies, government system integrators, researchers, OEMs, distributors and strategic partners worldwide. We have a regional sales force that markets and sells our products directly to customers in North America and Europe and use partner and distribution channels for other sales around the world. Each regional sales director communicates directly with customers executive, technical, manufacturing and purchasing personnel as needed to determine design, performance, and cost requirements. All of our partners work diligently to expand opportunities in emerging geographic markets and through alternate channels of distribution.

We believe that we provide a high level of support in developing and maintaining our long-term relationships with our customers. Customer service and support are provided through our offices and those of our partners that are located throughout the world.

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Healthcare Products

Medical Devices for Minimally Invasive Diagnostics, Surgery and Therapy

We are developing our award-winning distributed fiber optic sensing technology to enhance medical devices used for minimally invasive procedures for diagnostics, surgery or therapy. This technology can be applied to measure the position and shape of an instrument inside the body, as well as pressure and temperature. This information can be collected in real time and used as feedback to aid in the navigation of robotic surgical devices while inside the body by providing the device s current shape and position. It can provide similar benefits to non-robotic devices such as endoscopes.

We have entered into an intellectual property licensing, development and supply agreement with Intuitive Surgical, Inc., a technology leader in robotic-assisted minimally invasive surgery and the manufacturer of the da Vinci® Surgical System. Under our multi-year agreement with Intuitive, we are developing a fiber optic-based shape sensing and position tracking system to be integrated into Intuitive s products.

We entered into the agreement with Intuitive Surgical to expand our presence within the medical devices market. Our shape sensing and position tracking system provides real-time shape and position measurements which may help surgeons navigate through the body. The system consists of software, instrumentation and disposable optical sensing fiber. Our technology is unique and designed to provide the user with an accurate, direct and continuous measurement of device location within the body without limiting the surgeon s line of sight or introducing electrical signals or radiation into the body.

In January 2010, we amended our agreement with Intuitive in order to make it consistent with our January 2010 license agreement with Hansen Medical, Inc. described below and to make certain other changes to provide additional development of enhancements to the Intuitive product platform. The amendment also provides that Intuitive may request us to perform additional development work for a period of 10 years. The amendment also eliminates certain future fees that would have otherwise been payable by Intuitive and also eliminates all of Intuitive s minimum purchase requirements. Under the agreement as amended, we are continuing to perform certain research and development services for Intuitive Surgical. Depending on the progress of these services and the development of a resulting product, we have certain exclusive supply rights for the component that would implement our fiber-optic shape sensing technology.

Our business relationship with Hansen Medical, Inc. is further described below under Litigation and Agreements with Hansen Medical, Inc.

Medical Devices for Non-Invasive Monitoring and Diagnosis

Ultrasound is an important, non-invasive tool for diagnosis of some medical conditions. The pathway to market for medical diagnostic devices requires pre-clearance by government agencies, such as certification for safety through international standards, as well as approval of the devices by the U.S. Food and Drug Administration, or FDA, through a 510(k) registration. As described below under Government Regulation, this approval process can involve significant time and expense and may delay or prevent our products from reaching the market.

Our product in this field is our Emboli Detection and Classification (EDAC®) QUANTIFIER. The EDAC® QUANTIFIER is a non-invasive medical device that uses quantitative ultrasound technology to count emboli in ex-vivo blood circuits in real time. Emboli can be air bubbles or solid matter, such as lipids or blood clots, and can enter the blood circuit during critical and invasive medical procedures such as cardiopulmonary bypass surgery. Emboli are believed to be the cause of neurological or neuropsychological post-operative deficits and, in some cases, can be fatal. The EDAC® system uses advanced ultrasound technology to detect individual microemboli at rates up to 1,000 per second. Employing complex algorithms originally developed for the defense industry, the system is designed to provide cardiothoracic surgeons, perfusionists and anesthesiologists with an accurate rate of emboli in the blood circuit during heart-lung bypass and other operations. We launched the

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EDAC® QUANTIFIER in 2006 and received FDA clearance of our 510(k) application for this product in 2007. We have an agreement with Terumo Cardiovascular Systems Corporation, or Terumo CVS, a leading supplier of products for cardiopulmonary bypass surgeries, for Terumo CVS to market and distribute this product for clinical use in the United States.

Technology Development

We provide applied research for customers in our primary areas of focus, including secure computing, sensing and materials such as nanomaterials, coatings, adhesives, composites and bio-engineered materials. We generally compete to win contracts in these areas on a fee-for-service basis. Our Technology Development segment has a successful track record of evaluating innovative technologies to address the needs of our customers.

We seek to maximize the benefits we derive from our contract research business, including revenue generation and identification of promising technologies for further development. We focus primarily on opportunities in which we develop intellectual property rights in areas that we believe have commercialization potential. We take a disciplined approach to contract research to try to ensure that the costs of any contract we undertake will be fully reimbursed. We believe that this model is cost-efficient and significantly reduces our development risk in that it enables us to defray the costs of riskier technology development with third-party funding.

As of December 31, 2010, our Technology Development segment was engaged in 115 separate active contracts, with typical terms ranging from six months to three years. These projects span a wide range of applications across our areas of focus.

Although we conduct our applied research on a fee-for-service basis for third parties, we seek to retain full or partial rights to the technologies and patents developed under those contracts and to continuously enlarge and strengthen our intellectual property portfolio. Often, a new technology that we develop complements existing technologies and enables us to develop applications and products that were not previously possible. In addition, the technologies we develop are often applicable to commercial markets beyond the scope of the applications originally contemplated for those technologies in the contract research stage, and we endeavor to capture the value of those opportunities.

As of December 31, 2010, our Technology Development segment consisted of 113 full time employees, of whom 78 hold advanced degrees, including 27 Ph.D. degrees. We also utilize the knowledge and experience of researchers employed through the academic institutions, corporations and government agencies with which we subcontract. Our Technology Development segment is organized into subgroups according to areas of technology, with each subgroup being managed by its own director who is responsible for its financial performance. In addition, we have in place disciplined processes designed to ensure quality control of proposal preparation, program reviews, pipeline reviews, revenue tracking and financial reporting.

Each year, U.S. government federal agencies and departments are required to set aside a portion of their grant awards for SBIR-qualified organizations. SBIR contracts include Phase I feasibility contracts of up to $100,000 and Phase II proof-of-concept contracts, which can be as high as $1,000,000. We have won three National Tibbett s Awards from the SBA for outstanding SBIR performance. We have also won research contracts outside the SBIR program from corporations and government entities, which non-SBIR contracts have no financial limit and typically have a longer duration, ranging from 12 to 24 months. As we strive to grow, one of our goals is to derive a larger portion of our contract research revenues from contracts outside of the SBIR program.

Secure Computing and Communications

Our Secure Computing and Communications group, which we refer to as SCC, provides innovative solutions designed to secure critical technologies within U.S. government systems, including the protection of deployed hardware and software systems and the communications between them. SCC conducts both applied

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research and provides services to the government in this area. SCC s revenue is primarily derived from non-SBIR U.S. government contracts and purchase orders. SCC s revenues have grown substantially over the last several years, a trend that we expect to continue as the government increases spending on cyber-security initiatives.

Our team of digital design researchers, software developers, and security experts includes academics, experienced communications and military systems engineers, former government and intelligence personnel, and program and business management professionals. We have strong theoretical researchers who are used to translating theory into practice. Moreover, we excel at creating and integrating complex solutions together into usable toolsets in short timeframes.

Materials

Our nanomaterials activity is focused on fullerenes and tri-metal nitride endohedral fullerene (Trimetasphere®) materials. The Trimetasphere® nanomaterial is a carbon sphere with three metal atoms and an enclosed nitrogen atom. We have obtained an exclusive license from Virginia Tech to commercialize Trimetasphere nanomaterials under an issued U.S. patent and pending U.S. patent applications.

One potential market application of our nanomaterial technology is magnetic resonance imaging, or MRI. We believe that our Trimetasphere nanomaterial contrast agents may be able to provide a higher image contrast than existing contrast agents with a lower risk of toxicity. Medical contrast agents for human use, such as our Trimetasphere nanomaterials, must be approved by the FDA or similar foreign regulatory agencies before they can be marketed, which we do not expect to occur for at least several years. As described below under Government Regulation, this approval process can involve significant time and expense and may delay or prevent our products from reaching the market.

We are also researching other applications for nanomaterial-based drugs based on the anti-oxidative characteristics of fullerenes. These products are in the early stages of development, but if successful, could offer new market opportunities for us.

In November 2009, we acquired from Tego Biosciences, Inc. a patent portfolio, including in- and out-licenses, generally for the use of carbon fullerene nanomolecules in the treatment of human health. We believe this acquisition strengthens our patent position in this area, but there can be no assurances that we will be able to obtain commercial success as a result of these patents and licenses.

We are also developing a wide variety of other materials. One of these is a new class of non-halogenated fire retardant additives developed as a possible replacement for brominated fire retardants, which are coming under increasing criticism due to health concerns. Our non-halogenated fire retardant additives are being evaluated for use in composites, such as fiberglass.

We have developed a range of coatings, including both ultra hydrophobic and super oleo phobic coatings. These coatings are being evaluated for use in a number of applications. Other coatings under development include anti-corrosion and damage indicating coatings.

We are also working on a variety of bioengineered materials for homeostatic agents and wound healing. These materials must be approved by the FDA or similar foreign regulatory agencies before they can be marketed, which we do not expect to occur for at least several years.

Sensing

Our Technology Development segment also does a significant amount of applied research towards developing new sensors. This includes sensors for the purpose of corrosion, temperature, strain, pressure, structural health and chemical detection. Much of the work is directed to harsh environments and uses optics. Examples include measuring temperature and neutron flux in nuclear reactors, pressure and temperature in gas

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turbines, and temperatures of cryogenic lines. The effort utilizes both discrete and distributed sensors. Our technology development work in this area is closely aligned with our Products and Licensing segment and is directed at advancing the technology and the development of new applications.

Intellectual Property

We seek patent protection on inventions that we consider important to the development of our business. We rely on a combination of patent, trademark, copyright and trade secret laws in the United States and other jurisdictions, as well as confidentiality procedures and contractual provisions to protect our proprietary technology and our brand. We control access to our proprietary technology and enter into confidentiality and invention assignment agreements with our employees and consultants and confidentiality agreements with other third parties.

Our success depends in part on our ability to develop patentable products and obtain, maintain and enforce patent and trade secret protection for our products, as well as to successfully defend these patents against third-party challenges both in the United States and in other countries. We will only be able to protect our technologies from unauthorized use by third parties to the extent that we own or have licensed valid and enforceable patents or trade secrets that cover them. Furthermore, the degree of future protection of our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage.

Currently, we own or license approximately 90 U.S. patents and approximately 70 U.S. patent applications, and we intend to file, or request that our licensors file, additional patent applications for patents covering our products. Our issued patents, and the patents that may issue from our applications, generally have terms that are scheduled to expire between 2015 and 2031. However, patents may not be issued for any pending or future pending patent applications owned by or licensed to us. Claims allowed under any issued patent or future issued patent owned or licensed by us may not be valid or sufficiently broad to protect our technologies. Any issued patents owned by or licensed to us now or in the future may be challenged, invalidated or circumvented, and, in addition, the rights under such patents may not provide us with competitive advantages. In addition, competitors may design around our technology or develop competing technologies. Intellectual property rights may also be unavailable or limited in some foreign countries, which could make it easier for competitors to capture or increase their market share with respect to related technologies.

We could incur substantial costs to defend ourselves in suits brought against us or in suits in which we may assert our patent rights against others. An unfavorable outcome of any such litigation could have a material adverse effect on our business and results of operations.

Corporate History and Chapter 11 Reorganization

We were incorporated in the Commonwealth of Virginia in 1990 and reincorporated in the State of Delaware in April 2003. We completed our initial public offering in June 2006. Our executive offices are located at 1 Riverside Circle, Suite 400, Roanoke, Virginia 24016 and our main telephone number is (540) 769-8400.

On July 17, 2009, we filed a voluntary petition for relief in order to reorganize under Chapter 11 of the United States Bankruptcy Code, including a proposed plan of reorganization, which we refer to in this report as the Reorganization Plan, with the United States Bankruptcy Court for the Western District of Virginia. On January 12, 2010, the Bankruptcy Court approved the Reorganization Plan and we emerged from bankruptcy on that date.

Litigation and Agreements with Hansen Medical, Inc.

In June 2007, Hansen Medical Inc., or Hansen, a company for which we had conducted certain research and performed certain services, filed a lawsuit against us for using allegedly misappropriated trade secrets from

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Hansen in connection with our work with Intuitive or otherwise. On April 21, 2009, a jury found in favor of Hansen and awarded a verdict for $36.3 million against us. As a result of this jury verdict, we filed for Chapter 11 reorganization in July 2009.

On December 11, 2009, we and our wholly owned subsidiary Luna Technologies, Inc. entered into a settlement agreement with Hansen to settle all claims arising out of the litigation. On January 12, 2010, as part of our Reorganization Plan, we entered into a series of agreements with Hansen and Intuitive that were contemplated by the settlement agreement. The following is a summary of the material terms of these agreements.

License Agreement with Hansen (the Hansen License)

Under the Hansen License, we granted Hansen (i) a co-exclusive (with Intuitive), royalty-free, fully paid, perpetual and irrevocable license to our fiber optic shape sensing/localization technology within the medical robotics field. The license can only be sublicensed by Hansen in connection with Hansen products, except that Hansen can grant full sublicenses to third parties for single degree of freedom robotic medical devices; (ii) an exclusive (and fully sublicenseable) royalty-free, fully paid, perpetual and irrevocable license to our fiber optic shape sensing/localization technology for non-robotic medical devices within the orthopedics, vascular, and endoluminal fields; and (iii) a co-exclusive (with us) royalty-free, fully paid, perpetual and irrevocable license to our fiber optic shape sensing/localization technology for non-robotic medical devices in other medical fields (including colonoscopies but not including devices described in clause (ii) above). After five years, the exclusive license in the non-robotic endoluminal field may be converted to a co-exclusive (with us) license in certain circumstances in connection with certain supply provisions applicable to that field under the Development and Supply Agreement described below.

The Hansen License provides that Hansen and Intuitive have the right to enforce the intellectual property licensed by us within the medical robotics field. Hansen has the sole right to enforce such intellectual property for non-robotic devices in the orthopedics, vascular and endoluminal fields. We have the right to enforce such intellectual property in other non-robotic medical fields.

In addition, Hansen granted us a nonexclusive, sublicenseable, royalty-free, fully paid, perpetual and irrevocable license to certain Hansen fiber optic shape sensing/localization technology in all fields outside of the medical robotics field and the orthopedics, vascular and endoluminal fields. Furthermore, we confirmed Hansen s ownership of certain intellectual property developed in whole or in part by us under a prior agreement between us and Hansen.

Note Payable to Hansen (the Hansen Note)

In connection with the settlement agreement, we issued a promissory note to Hansen, which we refer to in this report as the Hansen Note, in the principal amount of $5.0 million, payable in 16 quarterly installments through January 2014. The note bears interest at a fixed rate of 8.5% and is secured by substantially all of our assets. The Hansen Note is subordinated to our primary bank credit facility.

Development and Supply Agreement

In connection with the settlement agreement, we also entered into a development and supply agreement with Hansen. Under the terms of this agreement, we will perform product development services with respect to fiber optic shape sensing at Hansen s request and provide our shape sensing products to Hansen. Revenues earned for product development will be determined in a manner consistent with our normal contract development services and will be payable monthly to us. Each quarter, to the extent such revenues exceed the installment payment owed by us to Hansen under the Hansen Note, then such excess will not be payable to us in cash but instead will be credited against the outstanding principal balance of the Hansen Note.

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Common Stock Issued to Hansen

In connection with the settlement agreement, on January 12, 2010, we issued 1,247,330 shares of common stock to Hansen, representing 9.9% of our common stock then outstanding. In addition, we issued to Hansen a warrant entitling Hansen to purchase, until January 12, 2013, a number of shares of common stock as necessary for Hansen to maintain a 9.9% ownership interest in our common stock, at an exercise price of $0.01 per share.

Competition

We compete for government, university and corporate research contracts relating to a broad range of technologies. Competition for contract research is intense and the industry has few barriers to entry. We compete against a number of in-house research and development departments of major corporations, as well as a number of small, limited-service contract research providers. The contract research industry continues to experience consolidation, which has resulted in greater competition for clients. Increased competition might lead to price and other forms of competition that could harm our operating results. We compete for contract research on the basis of a number of factors, including reliability, past performance, expertise and experience in specific areas, scope of service offerings, technological capabilities and price.

We also compete, or will compete, with a variety of companies in several different product markets. The products that we have developed or are currently developing will compete with other technologically innovative products, as well as products incorporating conventional materials and technologies. We expect that we will compete with companies in a wide range of industries, including semiconductors, electronics, biotechnology, textiles, alternative energy, military, defense, healthcare, telecommunications, industrial measurement, security applications and consumer electronics. Although there can be no assurance that we will continue to do so, we believe that we compete favorably in these areas because our products leverage advanced technologies to offer superior performance. If we are unable to effectively compete in these areas in the future, we could lose business to our competitors, which could harm our operating results.

Government Regulation

Qualification for Small Business Innovation Research Grants

SBIR is a highly competitive program that encourages small businesses to explore their technological potential and provides them with incentives to commercialize their technologies by funding research that might otherwise be prohibitively expensive or risky for companies like us. As noted above, we presently derive a significant portion of our revenue from this program, but we must continue to qualify for the SBIR program in order to be eligible to receive future SBIR awards. The eligibility requirements are:

Ownership. The company must be at least 51 percent owned and controlled by U.S. citizens or permanent resident aliens, or owned by an entity that is itself at least 51 percent owned and controlled by U.S. citizens or permanent resident aliens; and

Size. The company, including its affiliates, cannot have more than 500 employees.

These requirements are set forth in the SBA s regulations and are interpreted by the SBA s Office of Hearings and Appeals. In determining whether we satisfy the 51% ownership requirement, agreements to merge, stock options, convertible debt and other similar instruments are given present effect by the SBA as though the underlying security were actually issued unless the exercisability or conversion of such securities is speculative, remote or beyond the control of the security holder. We therefore believe our outstanding options and warrants held by eligible individuals may be counted as outstanding equity for purposes of meeting the 51% equity ownership requirement. We believe that we are in compliance with the SBA ownership requirements.

In addition, to be eligible for SBIR contracts, the number of our employees, including those of any entities that are considered to be affiliated with us, cannot exceed 500. As of December 31, 2010, we, including all of our divisions, had 187 full- and part-time employees. In determining whether we have 500 or fewer employees, the

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SBA may count the number of employees of entities that are large stockholders who are affiliated or have the power to control us. In determining whether two or more firms are affiliated, the SBA evaluates factors such as stock ownership or common management, but it ultimately may make its determination based on the totality of the circumstances. Under its regulations, the SBA may conclude that a stockholder that is large compared to others has the power to control us and is our affiliate. Eligibility protests can be raised to the SBA by a competitor or by the awarding contracting agency. We understand that the SBA is in the process of performing a formal size determination in connection with one of our SBIR contracts. We cannot provide assurance that the SBA will interpret its regulations in our favor. Regardless of the outcome of the SBA s pending determination, if we grow larger, and if our ownership becomes more diversified, we may no longer qualify for the SBIR program, and we may be required to seek alternative sources and partnerships to fund some of our research and development costs. Additional information regarding these risks may be found in Part I, Item 1A of this Annual Report on Form 10-K Risk Factors.

FDA Regulation of Products

Some of the products that we are developing are subject to regulation under the Food, Drug, and Cosmetic (FDC) Act. In particular, our Trimetasphere nanomaterial-based MRI contrast agent will be considered a drug, and our ultrasound diagnostic devices for measuring certain medical conditions will be considered medical devices, under the FDC Act. Both the statutes and regulations promulgated under the FDC Act govern, among other things, the testing, manufacturing, safety efficacy, labeling, storage, recordkeeping, advertising and other promotional practices involving the regulation of drug and devices. Compliance with the FDC Act may add time and expense to product development, and there can be no assurance that any of our products will be successfully developed and approved for marketing by the FDA.

Medical Devices

Our existing and future health care products, including our EDAC® product, are regulated by the FDA as medical devices. The nature of the requirements applicable to devices depends on their classification by the FDA. A device we develop would be automatically classified as a Class III device, requiring pre-market approval, unless the device is substantially equivalent to an existing device that has been classified in Class I or Class II or to a pre-1976 device that has not yet been classified. Class I or Class II devices require registration through the 510(k) exemption. If we were unable to demonstrate such substantial equivalence and unable to obtain reclassification, we would be required to undertake the costly and time-consuming approval process, comparable to that for new drugs, of conducting preclinical studies, obtaining an investigational device exemption to conduct clinical tests, filing a pre-market approval application and obtaining FDA approval.

If the device were a Class I product, the general controls of the FDC Act, primarily requirements relating to adulteration, misbranding and good manufacturing practices, would nevertheless apply, which would subject the device to regulatory oversight and compliance requirements. If substantial equivalence to a Class II device could be shown, the general controls plus special controls, such as performance standards, guidelines for safety and effectiveness and post-market surveillance, would apply. While demonstrating substantial equivalence to a Class I or Class II product is not as costly or time-consuming as the pre-market approval process for Class III devices, it can in some cases also involve conducting clinical tests to demonstrate that any differences between the new device and devices already on the market do not affect safety or effectiveness. If substantial equivalence to a pre-1976 device that has not yet been classified has been shown, it is possible that the FDA would subsequently classify the device as a Class III device and require the filing of pre-market approval applications at that time. If the FDA took that step, then filing an application acceptable to the FDA would be a prerequisite to remaining on the market.

New Drug Development

Our nanomaterial-based drug candidates, including our MRI contrast agent product candidates, are regulated by the FDA as pharmaceuticals. Obtaining FDA approval for a new drug has historically been a costly and time-consuming process. Generally, in order to gain FDA pre-market approval, a developer first must conduct

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preclinical studies in the laboratory and in animal model systems to gain preliminary information on an agent s efficacy and to identify any safety problems. The results of these studies are submitted as a part of an investigational new drug, or IND, application which the FDA must review before human clinical trials of an investigational drug can start. The IND application includes a detailed description of the clinical investigations to be undertaken. In order to commercialize any drug, we must sponsor and file an IND application and be responsible for initiating and overseeing the clinical studies to demonstrate the safety, efficacy and potency that are necessary to obtain FDA approval of any of the products. We will be required to select qualified investigators to supervise the administration of the products and ensure that the investigations are conducted and monitored in accordance with FDA regulations.

Clinical trials are normally done in three phases, although the phases may overlap. Phase I trials are concerned primarily with the safety and preliminary effectiveness of the drug, typically involve fewer than 100 subjects and may take from six months to over one year. Phase II trials typically involve larger patient populations and are designed primarily to demonstrate effectiveness in treating or diagnosing the disease or condition for which the drug is intended, although short-term side effects and risks in people whose health is impaired may also be examined. Phase III trials are expanded clinical trials with even larger numbers of patients and are intended to evaluate the overall benefit-risk relationship of the drug and to gather additional information for proper dosage and labeling of the drug. We believe the process of clinical trials generally takes two to five years to complete, but may take longer in certain circumstances. The FDA receives reports on the progress of each phase of clinical testing and may require the modification, suspension or termination of clinical trials if it concludes that an unwarranted risk is presented to patients.

If clinical trials of a new product are completed successfully, the sponsor of the product may seek FDA marketing approval. If the product is regulated as a drug, the FDA will require the submission and approval of a new drug application, or NDA, before commercial marketing of the drug. The NDA must include detailed information about the drug and its manufacture and the results of product development, preclinical studies and clinical trials. The testing and approval processes require substantial time and effort, and we cannot guarantee that any approval will be granted on a timely basis, if at all. If questions arise during the FDA review process, the approval process may be delayed or may not occur at all. Even with the submissions of relevant data, the FDA may ultimately decide that the NDA does not satisfy its regulatory criteria for approval and may deny approval or require additional clinical studies. In addition, the FDA may condition marketing approval on the conduct of specific post-marketing studies to further evaluate safety and effectiveness. Even if FDA regulatory clearances are obtained, a marketed product is subject to continual review. Later discovery of previously unknown problems or failure to comply with the applicable regulatory requirements may result in restrictions on the marketing of a product or withdrawal of the product from the market as well as possible civil or criminal sanctions.

Environmental Regulation

Our facilities and current and proposed activities involve the use of a broad range of materials that are considered hazardous under applicable laws and regulations. Accordingly, we are subject to a number of foreign and domestic laws and regulations relating to health and safety, protection of the environment, product labeling and product take back, and the storage, use, disposal of, and exposure to, hazardous materials and wastes. We could incur costs, fines and civil and criminal penalties, personal injury and third-party property damage claims, or we could be required to incur substantial investigation or remediation costs, if we were to violate or become liable under environmental, health and safety laws. Moreover, a failure to comply with environmental laws could result in fines and the revocation of environmental permits, which could prevent us from conducting our business. Liability under environmental laws can be joint and several and without regard to fault. There can be no assurance that violations of environmental health and safety laws will not occur in the future as a result of the inability to obtain permits, human error, equipment failure or other causes. Environmental laws could also become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with violations, which could harm our business. Further, violations of present and future environmental laws could restrict our ability to expand facilities and pursue certain technologies, as well as require us to acquire costly equipment or to incur potentially significant costs to comply with environmental regulations.

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The European Union Directive 2002/96/EC on Waste Electrical and Electronic Equipment, known as the WEEE Directive, requires producers of certain electrical and electronic equipment, including monitoring instruments, to be financially responsible for specified collection, recycling, treatment and disposal of past and present covered products placed on the market in the European Union. As a manufacturer of covered products, we may be required to register as a producer in some European Union countries, and we may incur some financial responsibility for the collection, recycling, treatment and disposal of both new products sold and products already sold prior to the WEEE Directive s enforcement date, including the products of other manufacturers when they are replaced by our own products. European Union Directive 2002/95/EC on the Restriction of the Use of Hazardous Substances in electrical and electronic equipment, known as the RoHS Directive, restricts the use of certain hazardous substances including mercury, lead and cadmium in specified covered products; however, the RoHS Directive currently exempts monitoring instruments from its requirements. If the European Commission were to remove this exemption, we would be required to change our manufacturing processes and redesign products regulated under the RoHS Directive in order to be able to continue to offer them for sale within the European Union. For some products, substituting certain components containing regulated hazardous substances may be difficult, costly or result in production delays. We will continue to review the applicability and impact of both directives on the sale of our products within the European Union. Although we cannot currently estimate the extent of such impact, they are likely to result in additional costs and could require us to redesign or change how we manufacture our products, any of which could adversely affect our operating results. Failure to comply with the directives could result in the imposition of fines and penalties, inability to sell covered products in the European Union and loss of revenues.

We have made, and will continue to make, expenditures to comply with current and future environmental laws. We anticipate that we could incur additional capital and operating costs in the future to comply with existing environmental laws and new requirements arising from new or amended statutes and regulations. In addition, because the applicable regulatory agencies have not yet promulgated final standards for some existing environmental programs, we cannot at this time reasonably estimate the cost for compliance with these additional requirements. The amount of any such compliance costs could be material. We cannot predict the impact that future regulations will impose upon our business.

Employees

As of December 31, 2010, we had 187 full-time employees, 108 of whom hold advanced degrees, including 36 Ph.D. degrees. None of our employees are covered by a collective bargaining agreement, and we consider our relationship with our employees to be good.

Backlog

We have historically had a backlog of contracts for which work has been scheduled, but for which a specified portion of work has not yet been completed. The approximate value of our backlog was $29.4 million at December 31, 2010, of which $26.3 million was from our Technology Development segment and $3.1 million was from our Products and Licensing segment. At December 31, 2009, our backlog was $20.5 million, of which $19.6 million was from our Technology Development segment and $0.9 million was from our Products and Licensing segment.

We define backlog as the dollar amount of obligations payable to us under negotiated contracts upon completion of a specified portion of work that has not yet been completed, exclusive of revenues previously recognized for work already performed under these contracts, if any. Total backlog includes funded backlog, which is the amount for which money has been directly authorized by the U.S. Congress or for which a purchase order has been received from a commercial customer, and unfunded backlog, which represents firm orders for which funding has not yet been appropriated. Unfunded backlog was $5.0 million and $5.8 million as of December 31, 2009 and 2010, respectively. Indefinite delivery and quantity contracts and unexercised options are not reported in total backlog. Our backlog is subject to delays or program cancellations that may be beyond our control.

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Research and Development

We incur research and development costs that are not related to our contract performance. These expenses were $3.6 million, $2.9 million and $1.7 million for the years ended December 31, 2008, 2009 and 2010, respectively. In addition, during these years, we spent $18.2 million, $19.6 million and $18.3 million, respectively, on customer-sponsored research activities, which amounts are reimbursed as part of our performance of customer contracts.

Operating Segments and Geographic Areas

For information with respect to our operating segments and geographic markets, see Note 14 to our Consolidated Financial Statements in Part II, Item 8 of this Annual Report on Form 10-K.

Website Access to Reports

Our website address is www.lunainnovations.com. We make available, free of charge under SEC Filings on the Investor Relations portion of our website, access to our annual report on Form 10-K, our quarterly reports on Form 10-Q and our current reports on Form 8-K, as well as amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended, as soon as reasonably practicable after such material is electronically filed with or furnished to the Securities and Exchange Commission, or SEC. Information appearing on our website is not incorporated by reference in and is not a part of this annual report. A copy of this annual report, as well as our other periodic and current reports, may be obtained from the SEC s public reference room at 100 F Street, N.E., Washington, D.C. 20549. Information on the operation of the Public Reference Room can be obtained by calling the SEC at 1-800-SEC-0330. The SEC maintains an Internet site that contains reports, proxy and information statements, and other information regarding our filings at www.sec.gov.

ITEM 1A. RISK FACTORS

You should carefully consider the risks described below before deciding whether to invest in our common stock. The risks described below are not the only ones we face. Additional risks not presently known to us or that we currently believe are immaterial may also impair our business operations and financial results. If any of the following risks actually occurs, our business, financial condition or results of operations could be adversely affected. In such case, the trading price of our common stock could decline and you could lose all or part of your investment. Our filings with the Securities and Exchange Commission also contain forward-looking statements that involve risks or uncertainties. Our actual results could differ materially from those anticipated or contemplated by these forward-looking statements as a result of a number of factors, including the risks we face described below, as well as other variables that could affect our operating results. Past financial performance should not be considered to be a reliable indicator of future performance, and investors should not use historical trends to anticipate results or trends in future periods.

RISKS RELATING TO OUR BUSINESS GENERALLY

Our recent senior management changes, our search for a new chief executive officer and a potential proxy fight could cause disruption in our business.

In August 2010, as part of our previously announced transition plan for the company s leadership, Dr. Kent Murphy, our founder, resigned from his position as our chief executive officer to assume the role of senior strategic and technology advisor to the company in a consulting capacity. Dr. Murphy remains a member of the board of directors, serving as our vice chairman. We are conducting a search for a new chief executive officer to replace Dr. Murphy. At the time of Dr. Murphy s resignation, we also implemented a number of other senior management changes. Jonathan Cool, who had been serving as our acting president and chief operating officer since May 2010, returned to his position on the board and as chairman of the board s strategy committee, where he focuses on strategic direction of the company. Dale Messick, our former chief financial officer, assumed the

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roles of interim president and interim chief operating officer, and Scott Graeff, our chief commercialization officer and treasurer, assumed the additional role of interim chief financial officer. We currently expect that Messrs. Messick and Graeff will serve in their newly designated interim capacities until we hire a new chief executive officer, at which time Mr. Messick will return to being chief financial officer. There can be no guarantee that the transition of these responsibilities will be successful.

Similarly, there can be no guarantee that our efforts to identify and recruit a permanent chief executive officer will be successful, or that a transition to a new chief executive officer will be smooth or successful. Leadership transitions can be inherently difficult to manage and may cause uncertainty or a disruption to our business or may increase the likelihood of turnover in key officers and employees.

In addition, Dr. Murphy has informed us that he may seek to nominate one or more directors to our board of directors and propose an amendment to our bylaws in his capacity as a stockholder of our company. If this occurs, we expect that Dr. Murphy s nomination would compete with the board s nominees for director to be elected at our 2011 annual meeting of stockholders, and he would separately conduct his own solicitation of our stockholders in favor of his nominee(s). Such a competing proxy contest would result in our incurring increased expenses in connection with our solicitation of proxies and divert the attention of our management. Perceived uncertainties as to the potential outcome of any proxy contest may also result in our inability to consummate potential business opportunities and may make it more difficult to attract and retain qualified personnel.

Competition for qualified personnel, particularly those with the significant skills and expertise of many of our officers and employees, remains intense. Any loss of key personnel could have a material adverse effect on our ability to meet key operational objectives, such as timely and effective project milestones and product introductions, which in turn could adversely affect our business, results of operations and financial condition. Also, the uncertainty inherent in our senior management transitions could lead to concerns from current and potential customers, suppliers and other third parties with whom we do business, any of which could have a material adverse impact on our operations. Finally, we have certain contractual obligations to adequately staff certain development projects, and a loss of key personnel could lead to our inability to meet these obligations, which in turn could expose us to claims for significant damages under any such agreement.

We experienced a decline in government research contract awards, upon which we have historically relied for a significant portion of our revenues, contemporaneously with our filing for Chapter 11 reorganization. If there is continued or further decline in government funding for existing or future government research contracts, including SBIR contracts, it could adversely affect our revenues, cash flows and ability to fund our growth.

Technology development revenue, which consists primarily of government-funded research, accounted for approximately 65% and 73% respectively, of our consolidated total revenues for the years ended December 31, 2010 and 2009. As a result, we are vulnerable to adverse changes in our revenues and cash flows if a significant number of our research contracts and subcontracts were to be simultaneously delayed or canceled for budgetary, performance or other reasons. For example, the U.S. government may cancel these contracts at any time without cause and without penalty or may change its requirements, programs or contract budget, any of which could reduce our revenues and cash flows from U.S. government research contracts. Our revenues and cash flows from U.S. government research contracts and subcontracts could also be reduced by declines or other changes in U.S. defense, homeland security and other federal agency budgets. In addition, we compete as a small business for some of these contracts, and in order to maintain our eligibility to compete as a small business, we, together with any affiliates, must continue to meet size and revenue limitations established by the U.S. government.

Our contract research customer base includes government agencies, corporations and academic institutions. Our customers are not obligated to extend their agreements with us and may elect not to do so. Also, our customers priorities regarding funding for certain projects may change and funding resources may no longer be available at previous levels.

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In addition, we may not be successful in securing future contracts. For example, the rate at which we received new research contract awards declined significantly contemporaneously with our Chapter 11 reorganization in 2009 and early 2010, which caused a decline in our contract research and technology development revenues throughout 2010. If we are unable to increase the rate at which we receive new research contract awards, we may continue to experience year over year declines in revenue for this portion of our business, which could have a significant adverse impact on our results of operations, cash flows and financial condition.

In addition to contract cancellations and changes in agency budgets, our future financial results may be adversely affected by curtailment of the U.S. government s use of contract research providers, including curtailment due to government budget reductions and related fiscal matters. These or other factors could cause U.S. defense and other federal agencies to conduct research internally rather than through commercial research organizations, to reduce their overall contract research requirements or to exercise their rights to terminate contracts. Alternatively, the U.S. government may discontinue the SBIR program or its funding altogether. Any of these actions could limit our ability to obtain new contract awards and adversely affect our revenues, cash flows and ability to fund our growth.

We rely and will continue to rely on contracts and grants awarded under the SBIR program for a significant portion of our revenues. A finding by the SBA that we no longer qualify to receive SBIR funding could adversely affect our business.

We compete as a small business for some of our government contracts. As described above, our revenues derived from the SBIR program account for a significant portion of our consolidated total revenues, and contract research, including SBIR contracts, will remain a significant portion of our consolidated total revenues for the foreseeable future.

We may not continue to qualify to participate in the SBIR program or to receive new SBIR awards from federal agencies. In order to qualify for SBIR contracts and grants, we must meet certain size and ownership eligibility criteria. These eligibility criteria are applied as of the time of the award of a contract or grant. A company can be declared ineligible for a contract award as a result of a size challenge filed with the SBA by a competitor or a federal agency.

In order to be eligible for SBIR contracts and grants, we must also be 51% owned and controlled by individuals who are U.S. citizens or permanent resident aliens. In the event our institutional ownership significantly increases, either because of increased buying by institutions or selling by individuals, we could lose eligibility for new SBIR contracts, public contracts, grants and other awards that are set aside for small businesses, including SBIR grants.

In order to be eligible for SBIR contracts and grants, the number of our employees, including those of any entities that are considered to be affiliated with us, cannot exceed 500. As of December 31, 2010, we had 187 employees. In determining whether we are affiliated with any other entity, the SBA will analyze whether another entity controls or has the power to control us. Carilion Clinic is our largest institutional stockholder. We understand that the SBA is in the process of performing a formal size determination that will focus on whether or not Carilion is our affiliate. Although we do not believe that Carilion has the power to control our company, we cannot assure you that the SBA will interpret its regulations in our favor on this question. Under its regulations, the SBA may conclude that a stockholder that is large compared to others has the power to control us and is our affiliate. If the SBA were to make a determination that we are affiliated with Carilion, we would exceed the size limitations, as Carilion has over 500 employees. In that case, we could lose eligibility for new SBA contracts, public contracts, grants and other awards that are set aside for small businesses based on the criterion of number of employees, including SBIR grants. In addition, it is possible that the sale of a substantial amount of common stock in the future by our founder, Dr. Kent Murphy, could negatively affect the interpretation of SBA regulations against us on this question of affiliation, as well as possibly result in an increase in our institutional

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ownership. We have agreed with Dr. Kent Murphy that he is not allowed to sell his stock prior to December 31, 2011, except pursuant to a registered offering on Form S-3 subject to certain conditions.

Moreover, as we grow our business, it is foreseeable that we will eventually exceed the SBIR employee limitations, in which case we may be required to seek alternative sources of revenues or capital.

Our business could suffer in other ways as a result of our 2009 bankruptcy filing.

As described elsewhere in this report, in July 2009 we filed a voluntary petition for relief in order to reorganize under Chapter 11 of the United States Bankruptcy Code. In January 2010, the bankruptcy court approved our reorganization plan and we emerged from bankruptcy. Even though our plan of reorganization has been implemented, operating results may be adversely affected by the possible reluctance of prospective customers, suppliers and lenders to do business with a company that was involved in bankruptcy proceedings. As noted above, the rate at which we received new research contract awards declined significantly in 2009 and 2010 following our reorganization, which resulted in a decline in our technology development revenues. In addition, our emergence from bankruptcy may result in reputational risks that make it difficult to attract and retain employees and work with customers and suppliers.

The results of our operations could be adversely affected by economic and political conditions and the effects of these conditions on our customers businesses and levels of business activity.

Global economic and political conditions affect our customers businesses and the markets they serve. A severe or prolonged economic downturn or a negative or uncertain political climate could adversely affect our customers financial conditions and the timing or levels of business activity of our customers and the industries we serve. This may reduce the demand for our products or depress pricing for our products and have a material adverse effect on our results of operations. Changes in global economic conditions could also shift demand to products or services for which we do not have competitive advantages, and this could negatively affect the amount of business we are able to obtain. In addition, if we are unable to successfully anticipate changing economic and political conditions, we may be unable to effectively plan for and respond to those changes, and our business could be negatively affected as a result.

There was a rapid softening of the economy and tightening of the financial markets in the second half of 2008 that continued into 2010. This slowing of the economy has reduced the financial capacity of our customers and possibly our potential customers, thereby slowing spending on the products and services we provide. The outlook for the economy for 2011 remains uncertain, and until there is a sustained economic recovery our revenues and results of operations could be negatively impacted.

Our failure to attract, train and retain skilled employees or members of our senior management and to obtain necessary security clearances for such persons or maintain a facility security clearance would adversely affect our business and operating results.

The availability of highly trained and skilled technical and professional personnel is critical to our future growth and profitability. Competition for scientists, engineers, technicians and professional personnel is intense and our competitors aggressively recruit key employees. In the past, we have experienced difficulties in recruiting and hiring these personnel as a result of the tight labor market in certain fields. Any difficulty in hiring or retaining qualified employees, combined with our growth strategy and future needs for additional experienced personnel, particularly in highly specialized areas such as nanomaterial manufacturing and fiber optic sensing technologies, may make it more difficult to meet all of our needs for these employees in a timely manner. Although we intend to continue to devote significant resources to recruit, train and retain qualified employees, we may not be able to attract and retain these employees, especially in technical fields in which the supply of experienced qualified candidates is limited. Any failure to do so would have an adverse effect on our business.

We provide certain services to the U.S. government that require us to maintain a facility security clearance and for certain of our employees and our board chairman to hold security clearances. As of the date of this report,

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the Defense Security Service, or DSS, is conducting a review of our processes in connection with security clearance applications. Depending on the outcome of this review, the DSS could require a variety of changes or impose sanctions on Luna. The loss of a facility security clearance, as a result of this review or otherwise, or the failure for necessary persons to obtain or retain sufficient security clearances could result in a U.S. government customer terminating an existing contract or choosing not to renew a contract or prevent us from bidding on or winning certain new government contracts.

In addition, our future success depends in a large part upon the continued service of key members of our senior management team. We do not maintain any key-person life insurance policies on our officers. The loss of any members of our management team or other key personnel could seriously harm our business.

We have a history of losses, and because our strategy for expansion may be costly to implement, we may experience continuing losses and may never achieve or maintain profitability or positive cash flow.

We incurred consolidated net losses attributable to common stockholders of approximately $3.0 million, $20.4 million and $6.3 million for the years ended December 31, 2010, 2009, and 2008, respectively. As of December 31, 2010, our accumulated deficit totaled $47.1 million. While our 2009 loss exceeded our historical losses due to expenses associated with litigation and our Chapter 11 filing, each of which was resolved in January 2010, we expect to continue to incur significant expenses as we expand our operations, including increased expenses for research and development, sales and marketing, manufacturing, finance and accounting personnel and expenses associated with being a public company. We may also grow our business in part through acquisitions of additional companies and complementary technologies which could cause us to incur greater than anticipated transaction expenses, amortization or write-offs of intangible assets and other acquisition-related expenses. As a result, we expect to incur net losses for the foreseeable future, and these losses could be substantial.

Our ability to generate additional revenues and to become profitable will depend on our ability to develop and commercialize innovative technologies, expand our contract research capabilities and sell the products that result from those development initiatives. We are unable to predict when or if we will be able to achieve profitability. If our revenues do not increase, or if our expenses increase at a greater rate than our revenues, we will continue to experience losses. Even if we do achieve profitability, we may not be able to sustain or increase our profitability on a quarterly or annual basis.

We might require additional capital to support and expand our business, and this capital might not be available on favorable terms, if at all.

We intend to continue to make investments to support our business growth, including developing new products, enhancing our existing products, obtaining important regulatory approvals, enhancing our operating infrastructure, completing our development activities and building our commercial scale manufacturing facilities. To the extent that we are unable to become or remain profitable and to finance our activities from our continuing operations, we may require additional funds to support these initiatives and to grow our business.

If we are successful in raising additional funds through issuances of equity or convertible debt securities, our existing stockholders could suffer significant dilution, including as the result of warrants in connection with the financing, and any new equity securities we issue could have rights, preferences and privileges superior to those of holders of our existing common stock. Furthermore, such financings may jeopardize our ability to apply for SBIR grants or qualify for SBIR contracts or grants, and our dependence on SBIR grants may restrict our ability to raise additional outside capital. If we raise additional funds through debt financings, these financings may involve significant cash payment obligations and covenants that restrict our ability to operate our business and make distributions to our stockholders.

As part of the settlement of our litigation with Hansen Medical, we issued to Hansen a warrant for additional shares of our common stock in an amount such that Hansen may maintain ownership of 9.9% of our total outstanding common stock for a period of three years at a price of one cent per common share. In the event that

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we raise capital through the issuance of common stock, shareholders will experience further dilution to the extent that Hansen exercises this warrant, which may make it more difficult to raise equity capital or may adversely affect the price at which we are able to raise equity capital.

If we are unable to obtain adequate financing or financing terms satisfactory to us when we require it, our ability to continue to support our business growth and to respond to business challenges could be significantly limited.

Our settlement and related agreements with Hansen could result in our making substantial future cash payments.

As part of the settlement of our litigation with Hansen Medical, we issued a promissory note payable to Hansen in the principal amount of $5.0 million. The note bears interest at a rate of 8.5% and is payable in quarterly installments through January 2014. Additionally, we entered into a Development and Supply Agreement with Hansen under which we will develop certain fiber optic shape sensing technologies or products for Hansen. Hansen is required to pay us for the development services provided. In the event that the amounts owed by Hansen under the Development and Supply Agreement exceed the quarterly installment payment under Hansen s promissory note, then the excess amount will not be payable in cash by Hansen but instead will reduce the outstanding principal balance on the note to Hansen. Additionally, Hansen may terminate the Development and Supply Agreement at any time without further obligation, while we would remain liable for the payments due under the note, which would have a material adverse effect on our cash flows. The Development and Supply Agreement also provides for substantial liquidated damages in the event that we are deemed not to have complied in a commercially reasonable good faith manner with respect to our technology development obligations under the agreement. In the event that we are required to make substantial payments to Hansen under the Development and Supply Agreement, it would adversely affect our results of operations and cash flows.

RISKS RELATING TO OUR OPERATIONS AND BUSINESS STRATEGY

If we cannot successfully transition our revenue mix from contract research revenues to product sales and license revenues, we may not be able to fully execute our business model or grow our business.

Our business model and future growth depend on our ability to transition to a revenues mix that contains significantly larger product sales and revenues from the provision of services or from licensing. Product sales and these revenues potentially offer greater scalability than contract research revenues. Our current plan is to increase our sales of commercial products, our licensing revenue and our provision of non-research services to customers so as to represent a larger percentage of our total revenues. If we are unable to develop and grow our product sales and revenues from the provision of services or from licensing to augment our contract research revenues, however, our ability to execute our business model or grow our business could suffer. There can be no assurance that we will be able to achieve increased revenues in this manner.

If we are unable to manage growth effectively, our revenue and net loss could be adversely affected.

While historically we have developed and commercialized only a few products at a time, we plan to grow our revenues by developing and commercializing multiple products concurrently across many industries, technologies and markets. Our ability to expand our business by developing and commercializing multiple products simultaneously requires that we manage a diverse range of projects and expand our personnel resources. Our inability to do any of these could prevent us from successfully implementing our growth strategy, causing our revenues and profits to be adversely affected.

To advance the development of multiple promising potential products concurrently, we need to manage effectively the logistics of maintaining the requisite corporate, operational, administrative and financing functions for each of these product opportunities. Potentially expanding our operations into new geographic areas and relying on multiple facilities to develop and manufacture different products concurrently pose additional challenges. We have little experience in managing these functions simultaneously for multiple projects in

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development or in building new infrastructure and integrating the operations of various facilities. If we cannot manage this process successfully, we may experience operating difficulties, additional expenditures and limited revenue growth.

We may need to expand our personnel resources to grow our business effectively. We believe that sustained growth at a higher rate will place a strain on our management as well as on our other human resources. To manage this growth, we must continue to attract and retain qualified management, professional, scientific and technical and operating personnel. If we are unable to recruit a sufficient number of qualified personnel, we may be unable to staff and manage projects adequately, which in turn may slow the rate of growth of our contract research revenue or our product development efforts.

We may not be successful in identifying market needs for new technologies and developing new products to meet those needs.

The success of our business model depends on our ability to correctly identify market needs for new technologies. We intend to identify new market needs, but we may not always have success in doing so in part because our contract research largely centers on identification and development of unproven technologies, often for new or emerging markets. Furthermore, we must identify the most promising technologies from a sizable pool of projects. If our commercialization strategy process fails to identify projects with commercial potential or if management does not ensure that such projects advance to the commercialization stage, we may not successfully commercialize new products and grow our revenues.

Our growth strategy requires that we not only identify new technologies that meet market needs, but that we also develop successful commercial products that address those needs. We face several challenges in developing successful new products. Many of our existing products and those currently under development, including our Trimetasphere® carbon nanomaterials, are technologically innovative and require significant and lengthy product development efforts. These efforts include planning, designing, developing and testing at the technological, product and manufacturing-process levels. These activities require us to make significant investments. Although there are many potential applications for our technologies, our resource constraints require us to focus on specific products and to forgo other opportunities. We expect that one or more of the potential products we choose to develop will not be technologically feasible or will not achieve commercial acceptance, and we cannot predict which, if any, of our products we will successfully develop or commercialize. The technologies we research and develop are new and steadily changing and advancing. The products that are derived from these technologies may not be applicable or compatible with the state of technology or demands in existing markets. Our existing products and technologies may become uncompetitive or obsolete if our competitors adapt more quickly than we do to new technologies and changes in customers requirements. Furthermore, we may not be able to identify if and when new markets will open for our products given that future applications of any given product may not be readily determinable, and we cannot reasonably estimate the size of any markets that may develop. If we are not able to successfully develop new products, we may be unable to increase our product revenues.

We depend on third-party vendors for specialized components in our manufacturing operations, making us vulnerable to supply shortages and price fluctuations that could harm our business.

We primarily rely on third-party vendors for the manufacture of the specialized components used in our products. The highly specialized nature of our supply requirements poses risks that we may not be able to locate additional sources of the specialized components required in our business. For example, there are few manufacturers who produce the special lasers used in our optical test equipment. Our reliance on these vendors subjects us to a number of risks that could negatively affect our ability to manufacture our products and harm our business, including interruption of supply. Although we are now manufacturing tunable lasers in low-rate initial production, we expect our overall reliance on third-party vendors to continue. Any significant delay or interruption in the supply of components, or our inability to obtain substitute components or materials from alternate sources at acceptable prices and in a timely manner, could impair our ability to meet the demand of our customers and could harm our business.

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If we are unable to secure third-party reimbursement for our medical products, our revenue and net loss could be adversely affected.

In both the United States and foreign markets where we intend to sell our medical products, third-party payers such as the government and health insurance companies are generally responsible for hospital and doctor reimbursement for medical products and services. Governments and insurance companies carefully review and may challenge the prices charged for medical products and services. Reimbursement rates from private insurance companies vary depending on the procedure performed, the third party involved, the insurance plan involved and other factors. In the United States, reimbursement for medical procedures under the Medicare and Medicaid programs is administered by Centers for Medicare & Medicaid Services. Medicare reimburses both hospitals and physicians a pre-determined, fixed amount based on the procedure performed. This fixed amount is paid regardless of the actual costs incurred by the hospital or physician in furnishing the care and is often unrelated to the specific devices used in that procedure. Thus, any reimbursements that hospitals or physicians obtain for using our medical products will generally have to cover any additional costs that hospitals incur in purchasing such products.

Hospitals and medical centers to which we intend to sell our medical products typically bill the services performed with our products to various third-party payers, such as Medicare, Medicaid and other government programs and private insurance plans. If hospitals do not obtain sufficient reimbursement from third-party payers for procedures performed with our products, or if governmental and private payors policies do not permit reimbursement for services performed using our products, demand for our products may be negatively impacted.

In countries outside the United States, reimbursement is obtained from various sources, including governmental authorities, private health insurance plans and labor unions. To sell our product in foreign markets, we may need to seek international reimbursement approvals. We cannot be certain whether such required approvals will be obtained in a timely manner or at all.

Furthermore, any regulatory or legislative developments in domestic or foreign markets that eliminate or reduce reimbursement rates for procedures performed with our products could harm our ability to sell our products or cause downward pressure on the prices of our products, either of which would have a negative effect on our product revenue and net loss.

We face and will face substantial competition in several different markets that may adversely affect our results of operations.

We face and will face substantial competition from a variety of companies in several different markets. Our competitors in contract research include, but are not limited to, companies such as General Dynamics Corporation, Lockheed Martin Corporation, SAIC, Inc. and SRA International, Inc. In the instrumentation and test and measurement products market, our competitors include, but are not limited to, large companies such as Agilent Technologies, Inc., Analog Devices, Inc., Freescale Semiconductor, Inc., JDS Uniphase Corp., Robert Bosch GmbH and Silicon Sensing, as well as emerging companies. In addition, in the MRI contrast agent market our competitors include Amersham Plc, Berlex Laboratories, Inc., Bracco Diagnostics, Inc. and Mallinckrodt Inc.

The products that we have developed or are currently developing will compete with other technologically innovative products as well as products incorporating conventional materials and technologies. We expect that our products will face competition in a wide range of industries, including telecommunications, industrial instrumentation, healthcare, military and security applications.

Many of our competitors have longer operating histories, greater name recognition, larger customer bases and significantly greater financial, sales and marketing, manufacturing, distribution, technical and other resources than we do. These competitors may be able to adapt more quickly to new or emerging technologies and changes in customer requirements. In addition, current and potential competitors have established or may establish financial or strategic relationships among themselves or with existing or potential customers or other third parties. Accordingly, new competitors or alliances among competitors could emerge and rapidly acquire

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significant market share. We cannot assure you that we will be able to compete successfully against current or new competitors, in which case our net revenues may fail to increase or may decline.

We have limited experience manufacturing our products in commercial quantities in a cost-effective manner, which could adversely impact our business.

In the past, we produced most of our products on a custom order basis rather than pursuant to large contracts that require production on a large volume basis. Accordingly, other than the commercial manufacture of products by our Products and Licensing segment, we have no experience manufacturing products in large volumes. Because our experience in large scale manufacturing is limited, we may encounter unforeseen difficulties in our efforts to manufacture other products or materials in commercial quantities or have to rely on third-party contractors over which we may not have direct control to manufacture our products. For example, we may need to develop or in-license Trimetasphere nanomaterial purification and isolation technology, which would result in manufacturing delays or shortfalls. We may also encounter difficulties and delays in manufacturing our products for any of the following reasons:

- we may need to expand our manufacturing operations, and our production processes may have to change to accommodate this growth;
- to increase our manufacturing output significantly, we will have to attract and retain qualified employees, who are in short supply, for the assembly and testing operations;
- we might have to sub-contract to outside manufacturers which might limit our control of costs and processes; and
- our manufacturing operations may have to comply with government specifications.

If we are unable to keep up with demand for our products, our revenues could be impaired, market acceptance for our products could be adversely affected and our customers might instead purchase our competitors products. Moreover, failure to develop and maintain a U.S. market for goods developed with U.S. government-licensed technology may result in the cancellation of the relevant U.S. government licenses. Our inability to manufacture our products successfully would have a material adverse effect on our revenues.

Even if we are able to manufacture our products on a commercial scale, the cost of manufacturing our products may be higher than we expect. If the costs associated with manufacturing are not significantly less than the prices at which we can sell our products, we may not be able to operate at a profit.

Our nanotechnology-enabled products are new and may be, or may be perceived as being, harmful to human health or the environment.

While we believe that none of our current products contain chemicals known by us to be hazardous or subject to environmental regulation, it is possible that our current or future products, particularly carbon-based nanomaterials, may become subject to environmental or other regulation. We intend to develop and sell carbon-based nanomaterials as well as nanotechnology-enabled products, which are products that include nanomaterials as a component to enhance those products performance. Nanomaterials and nanotechnology-enabled products have a limited historical safety record. Because of their size or shape or because they may contain harmful elements, such as gadolinium and other rare-earth metals, our products could pose a safety risk to human health or the environment. These characteristics may also cause countries to adopt regulations in the future prohibiting or limiting the manufacture, distribution or use of nanomaterials or nanotechnology-enabled products. Such regulations may inhibit our ability to sell some products containing those materials and thereby harm our business or impair our ability to develop commercially viable products.

The subject of nanotechnology has received negative publicity and has aroused public debate. Government authorities could, for social or other purposes, prohibit or regulate the use of nanotechnology. Ethical and other concerns about nanotechnology could adversely affect acceptance of our potential products or lead to government regulation of nanotechnology-enabled products.

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We face risks associated with our international business.

We currently conduct business internationally and we might considerably expand our international activities in the future. Our international business operations are subject to a variety of risks associated with conducting business internationally, including:

- having to comply with U.S. export control regulations and policies that restrict our ability to communicate with non-U.S. employees and supply foreign affiliates and customers;
- changes in or interpretations of foreign regulations that may adversely affect our ability to sell our products, perform services or repatriate profits to the United States;
- the imposition of tariffs;
- hyperinflation or economic or political instability in foreign countries;
- imposition of limitations on or increase of withholding and other taxes on remittances and other payments by foreign subsidiaries or joint ventures;
- conducting business in places where business practices and customs are unfamiliar and unknown;
- the imposition of restrictive trade policies;
- the imposition of inconsistent laws or regulations;
- the imposition or increase of investment and other restrictions or requirements by foreign governments;
- uncertainties relating to foreign laws and legal proceedings;
- having to comply with a variety of U.S. laws, including the Foreign Corrupt Practices Act; and
- having to comply with licensing requirements.

We do not know the impact that these regulatory, geopolitical and other factors may have on our international business in the future.

RISKS RELATING TO OUR REGULATORY ENVIRONMENT

As a provider of contract research to the U.S. government, we are subject to federal rules, regulations, audits and investigations, the violation or failure of which could adversely affect our business.

We must comply with and are affected by laws and regulations relating to the award, administration and performance of U.S. government contracts. Government contract laws and regulations affect how we do business with our government customers and, in some instances, impose added costs on our business. A violation of a specific law or regulation could result in the imposition of fines and penalties, termination of our contracts or debarment from bidding on contracts. In some instances, these laws and regulations impose terms or rights that are more favorable to the government than those typically available to commercial parties in negotiated transactions. For example, the U.S. government may terminate any of our government contracts and, in general, subcontracts, at their convenience, as well as for default based on performance.

In addition, U.S. government agencies, including the Defense Contract Audit Agency and the Department of Labor, routinely audit and investigate government contractors. These agencies review a contractor s performance under its contracts, cost structure and compliance with applicable laws, regulations and standards. The U.S. government also may review the adequacy of, and a contractor s compliance with, its internal control systems and policies, including the contractor s purchasing, property, estimating, compensation and management information systems. Any costs found to be improperly allocated to a specific contract will not be reimbursed, while such costs already reimbursed must be refunded. If an audit uncovers improper or illegal activities, we may be subject to civil and criminal penalties and administrative sanctions, including termination of contracts, forfeiture of profits, suspension of payments, fines and suspension or prohibition from doing business with the U.S. government. In addition, our reputation could suffer serious harm if allegations of impropriety were made against us.

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In addition to the risk of government audits and investigations, U.S. government contracts and grants impose requirements on contractors and grantees relating to ethics and business practices, which carry civil and criminal penalties including monetary fines, assessments, loss of the ability to do business with the U.S. government and certain other criminal penalties.

We may also be prohibited from commercially selling certain products that we develop under our Technology Development segment or related products based on the same core technologies if the U.S. government determines that the commercial availability of those products could pose a risk to national security. For example, certain of our wireless technologies have been classified as secret by the U.S. government and as a result we cannot sell them commercially. Any of these determinations would limit our ability to generate product sales and license revenues.

Our operations are subject to domestic and foreign laws, regulations and restrictions, and noncompliance with these laws, regulations and restrictions could expose us to fines, penalties, suspension or debarment, which could have a material adverse effect on our profitability and overall financial position.

Our international sales subject us to numerous U.S. and foreign laws and regulations, including, without limitation, regulations relating to imports, exports (including the Export Administration Regulations and the International Traffic in Arms Regulations), technology transfer restrictions, anti-boycott provisions, economic sanctions and the Foreign Corrupt Practices Act. Failure by us or our sales representatives or consultants to comply with these laws and regulations could result in administrative, civil, or criminal liabilities and could result in suspension of our export privileges, which could have a material adverse effect on our business. Changes in regulation or political environment may affect our ability to conduct business in foreign markets including investment, procurement and repatriation of earnings.

Our healthcare and medical products are subject to a lengthy and uncertain domestic regulatory approval process. If we do not obtain and maintain the necessary domestic regulatory approvals or clearances, we will not be able to market and sell our products for clinical use in the United States.

Certain of our current and potential products will require regulatory clearances or approvals prior to commercialization. In particular, our Trimetasphere® nanomaterial-based MRI contrast agent will be considered a drug under the Federal Food, Drug and Cosmetic Act, or FDC Act, and our EDAC® ultrasound diagnostic devices for measuring certain medical conditions will be considered medical devices under the FDC Act. Drugs and some medical devices are subject to rigorous preclinical testing and other approval requirements by the U.S. Food and Drug Administration, or FDA, pursuant to the FDC Act, and regulations under the FDC Act, as well as by similar health authorities in foreign countries.

Various federal statutes and regulations also govern or influence the testing, manufacturing, safety, labeling, packaging, advertising, storage, registration, listing and recordkeeping related to marketing of pharmaceuticals. The process of obtaining these clearances or approvals and the subsequent compliance with appropriate federal statutes and regulations require the expenditure of substantial resources, which we may not be able to obtain on favorable terms, if at all. We cannot be certain that any required FDA or other regulatory approval will be granted or, if granted, will not be withdrawn. Our failure to obtain the necessary regulatory approvals, or our failure to obtain them in a timely manner, will prevent or delay our commercialization of new products and our business or our stock price could be adversely affected as a result.

In general, the FDA regulates the research, testing, manufacturing, safety, labeling, storage, record keeping, promotion, distribution and production of medical devices in the United States to ensure that medical products distributed domestically are safe and effective for their intended uses. In order for us to market medical devices for clinical use in the United States, we generally must first obtain clearance from the FDA pursuant to Section 510(k) of the FDC Act, which has occurred in the case of the EDAC® product. Clearance under Section 510(k) requires demonstration that a new device is substantially equivalent to another device with 510(k) clearance or is eligible for grandfathered status. If we significantly modify our products after they receive FDA

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clearance, the FDA may require us to submit a separate 510(k) or premarket approval application, or PMA, for the modified product before we are permitted to market the products in the United States. In addition, if we develop products in the future that are not considered to be substantially equivalent to a device with 510(k) clearance or are ineligible for grandfathered status, we will be required to obtain FDA approval by submitting a PMA.

The FDA may not act favorably or quickly in its review of our 510(k) or PMA submissions, or we may encounter significant difficulties and costs in our efforts to obtain FDA clearance or approval, all of which could delay or preclude sale of new products for clinical use in the United States. Furthermore, the FDA may request additional data or require us to conduct further testing, or compile more data, including clinical data and clinical studies, in support of a 510(k) submission. The FDA may also, instead of accepting a 510(k) submission, require us to submit a PMA, which is typically a much more complex and burdensome application than a 510(k). To support a PMA, the FDA would likely require that we conduct one or more clinical studies to demonstrate that the device is safe and effective. We may not be able to meet the requirements to obtain 510(k) clearance or PMA approval, or the FDA may not grant any necessary clearances or approvals. In addition, the FDA may place significant limitations upon the intended use of our products as a condition to a 510(k) clearance or PMA approval. Product applications can also be denied or withdrawn due to failure to comply with regulatory requirements or the occurrence of unforeseen problems following clearance or approval. Any delays or failure to obtain FDA clearance or approvals of new products we develop, any limitations imposed by the FDA on new product use, or the costs of obtaining FDA clearance or approvals could have a material adverse effect on our business, financial condition and results of operations.

Complying with FDA regulations is an expensive and time-consuming process. Our failure to fully comply with such regulations could subject us to enforcement actions.

Our commercially distributed medical device products will be subject to numerous post-market regulatory requirements, including the following:

- Quality System Regulation, or QSR, which requires manufacturers to follow elaborate design, testing, control, documentation and other quality assurance procedures during the manufacturing process;
- labeling regulations;
- the FDA s general prohibition against false or misleading statements in the labeling or promotion of products for unapproved or off-label uses;
- the Reports of Corrections and Removals regulation, which requires that manufacturers report to the FDA recalls and field corrective actions taken to reduce a risk to health or to remedy a violation of the FDC Act that may pose a risk to health; and
- the Medical Device Reporting regulation, which requires that manufacturers report to the FDA if their device may have caused or contributed to a death or serious injury or malfunctioned in a way that would likely cause or contribute to a death or serious injury if it were to recur.

We will also become subject to inspection and marketing surveillance by the FDA to determine our compliance with regulatory requirements. If the FDA determines that we have failed to comply, it can institute a wide variety of enforcement actions ranging from a regulatory letter to a public warning letter to more severe civil and criminal sanctions. Our failure to comply with applicable requirements could lead to an enforcement action that may have an adverse effect on our financial condition and results of operations.

If our manufacturing facilities do not meet Federal, state or foreign country manufacturing standards, we may be required to temporarily cease all or part of our manufacturing operations, which would result in product delivery delays and negatively impact revenue.

Our manufacturing facilities are subject to periodic inspection by regulatory authorities and our operations will continue to be regulated by the FDA for compliance with Good Manufacturing Practice requirements

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contained in the QSRs. We are also required to comply with International Organization for Standardization, or ISO, quality system standards in order to produce products for sale in Europe. If we fail to continue to comply with Good Manufacturing Practice requirements or ISO standards, we may be required to cease all or part of our operations until we comply with these regulations. Obtaining and maintaining such compliance is difficult and costly. We cannot be certain that our facilities will be found to comply with Good Manufacturing Practice requirements or ISO standards in future inspections and audits by regulatory authorities.

Our medical products are subject to various international regulatory processes and approval requirements. If we do not obtain and maintain the necessary international regulatory approvals, we may not be able to market and sell our medical products in foreign countries.

To be able to market and sell our products in other countries, we must obtain regulatory approvals and comply with the regulations of those countries. These regulations, including the requirements for approvals and the time required for regulatory review, vary from country to country. Obtaining and maintaining foreign regulatory approvals are expensive, and we cannot be certain that we will receive regulatory approvals in any foreign country in which we plan to market our products. If we fail to obtain regulatory approval in any foreign country in which we plan to market our products, our ability to generate revenue will be harmed.

The European Union requires that manufacturers of medical products obtain the right to affix the CE mark to their products before selling them in member countries of the European Union. The CE mark is an international symbol of adherence to quality assurance standards and compliance with applicable European medical device directives. In order to obtain the right to affix the CE mark to products, a manufacturer must obtain certification that its processes meet certain European quality standards.

We have not yet received permission to affix the CE mark to our medical products. We do not know whether we will be able to obtain permission to affix the CE mark for new or modified products. If we are unable to obtain permission to affix the CE mark to our products, we will not be able to sell our products in member countries of the European Union.

We are subject to additional significant foreign and domestic government regulations, including environmental and health and safety regulations, and failure to comply with these regulations could harm our business.

Our facilities and current and proposed activities involve the use of a broad range of materials that are considered hazardous under applicable laws and regulations. Accordingly, we are subject to a number of foreign, federal, state and local laws and regulations relating to health and safety, protection of the environment and the storage, use, disposal of, and exposure to, hazardous materials and wastes. We could incur costs, fines and civil and criminal penalties, personal injury and third party property damage claims, or could be required to incur substantial investigation or remediation costs, if we were to violate or become liable under environmental, health and safety laws. Moreover, a failure to comply with environmental laws could result in fines and the revocation of environmental permits, which could prevent us from conducting our business. Liability under environmental laws can be joint and several and without regard to fault. There can be no assurance that violations of environmental health and safety laws will not occur in the future as a result of the inability to obtain permits, human error, equipment failure or other causes. Environmental laws could become more stringent over time, imposing greater compliance costs and increasing risks and penalties associated with violations, which could harm our business. Accordingly, violations of present and future environmental laws could restrict our ability to expand facilities, pursue certain technologies, and could require us to acquire costly equipment or incur potentially significant costs to comply with environmental regulations.

The European Union Directive 2002/96/EC on Waste Electrical and Electronic Equipment, known as the WEEE Directive, requires producers of certain electrical and electronic equipment, including monitoring instruments, to be financially responsible for specified collection, recycling, treatment and disposal of past and present covered products placed on the market in the European Union. As a manufacturer of covered products,

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we may be required to register as a producer in some European Union countries and we may incur some financial responsibility for the collection, recycling, treatment and disposal of both new product sold and product already sold prior to the WEEE Directive s enforcement date, including the products of other manufacturers when they are replaced by our own products. European Union Directive 2002/95/EC on the Restriction of the use of Hazardous Substances in electrical and electronic equipment, known as the RoHS Directive, restricts the use of certain hazardous substances, including mercury, lead and cadmium in specified covered products; however, the RoHS Directive currently exempts monitoring instruments from its requirements. If the European Commission were to remove this exemption in the future, we would be required to change our manufacturing processes and redesign products regulated under the RoHS Directive in order to be able to continue to offer them for sale within the European Union. For some products, substituting certain components containing regulated hazardous substances may be difficult, costly or result in production delays. We will continue to review the applicability and impact of both directives on the sale of our products within the European Union, and although we cannot currently estimate the extent of such impact, they are likely to result in additional costs and could require us to redesign or change how we manufacture our products, any of which could adversely affect our operating results. Failure to comply with the directives could result in the imposition of fines and penalties, inability to sell covered products in the European Union and loss of revenues.

Compliance with foreign, federal, state and local environmental laws and regulations represents a small part of our present budget. If we fail to comply with any such laws or regulations, however, a government entity may levy a fine on us or require us to take costly measures to ensure compliance. Any such fine or expenditure may adversely affect our development. We are committed to complying with and, to our knowledge, are in compliance with, all governmental regulations. We cannot predict the extent to which future legislation and regulation could cause us to incur additional operating expenses, capital expenditures or restrictions and delays in the development of our products and properties.

RISKS RELATING TO OUR INTELLECTUAL PROPERTY

Our proprietary rights may not adequately protect our technologies.

Our commercial success will depend in part on our obtaining and maintaining patent, trade secret, copyright and trademark protection of our technologies in the United States and other jurisdictions as well as successfully enforcing this intellectual property and defending it against third-party challenges. We will only be able to protect our technologies from unauthorized use by third parties to the extent that valid and enforceable intellectual property protections, such as patents or trade secrets, cover them. In particular, we place considerable emphasis on obtaining patent and trade secret protection for significant new technologies, products and processes. The degree of future protection of our proprietary rights is uncertain because legal means afford only limited protection and may not adequately protect our rights or permit us to gain or keep our competitive advantage. The degree of future protection of our proprietary rights is also uncertain for products that are currently in the early stages of development because we cannot predict which of these products will ultimately reach the commercial market or whether the commercial versions of these products will incorporate proprietary technologies.

Our patent position is highly uncertain and involves complex legal and factual questions. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our patents or in third-party patents. For example:

- we or our licensors might not have been the first to make the inventions covered by each of our pending patent applications and issued patents;
- we or our licensors might not have been the first to file patent applications for these inventions;
- others may independently develop similar or alternative technologies or duplicate any of our technologies;
- it is possible that none of our pending patent applications or the pending patent applications of our licensors will result in issued patents;

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- patents may issue to third parties that cover how we might practice our technology;

- our issued patents and issued patents of our licensors may not provide a basis for commercially viable technologies, may not provide us with any competitive advantages, or may be challenged and invalidated by third parties; and

- we may not develop additional proprietary technologies that are patentable.

Patents may not be issued for any pending or future pending patent applications owned by or licensed to us, and claims allowed under any issued patent or future issued patent owned or licensed by us may not be valid or sufficiently broad to protect our technologies. Moreover, protection of certain of our intellectual property may be unavailable or limited in the United States or in foreign countries, and we have not sought to obtain foreign patent protection for certain of our products or technologies due to cost, concerns about enforceability or other reasons. Any issued patents owned by or licensed to us now or in the future may be challenged, invalidated, or circumvented, and the rights under such patents may not provide us with competitive advantages. In addition, competitors may design around our technology or develop competing technologies. Intellectual property rights may also be unavailable or limited in some foreign countries, and in the case of certain products no foreign patents were filed or can be filed. This could make it easier for competitors to capture or increase their market share with respect to related technologies. We could incur substantial costs to bring suits in which we may assert our patent rights against others or defend ourselves in suits brought against us. An unfavorable outcome of any litigation, such as our litigation with Hansen, could have a material adverse effect on our business and results of operations.

We also rely on trade secrets to protect our technology, especially where we believe patent protection is not appropriate or obtainable. However, trade secrets are difficult to protect. We regularly attempt to obtain confidentiality agreements and contractual provisions with our collaborators, employees and consultants to protect our trade secrets and proprietary know-how. These agreements may be breached or may not have adequate remedies for such breach. While we use reasonable efforts to protect our trade secrets, our employees, consultants, contractors or scientific and other advisors, or those of our strategic partners, may unintentionally or willfully disclose our information to competitors. If we were to enforce a claim that a third party had illegally obtained and was using our trade secrets, our enforcement efforts would be expensive and time consuming, and the outcome would be unpredictable. In addition, courts outside the United States are sometimes unwilling to protect trade secrets. Moreover, if our competitors independently develop equivalent knowledge, methods and know-how, it will be more difficult for us to enforce our rights and our business could be harmed.

If we are not able to defend the patent or trade secret protection position of our technologies, then we will not be able to exclude competitors from developing or marketing competing technologies and we may not generate enough revenues from product sales to justify the cost of developing our technologies and to achieve or maintain profitability.

We also rely on trademarks to establish a market identity for our company and our products. To maintain the value of our trademarks, we might have to file lawsuits against third parties to prevent them from using trademarks confusingly similar to or dilutive of our registered or unregistered trademarks. Also, we might not obtain registrations for our pending trademark applications, and we might have to defend our registered trademark and pending trademark applications from challenge by third parties. Enforcing or defending our registered and unregistered trademarks might result in significant litigation costs and damages, including the inability to continue using certain trademarks.

Third parties may claim that we infringe their intellectual property, and we could suffer significant litigation or licensing expense as a result.

Various U.S. and foreign issued patents and pending patent applications, which are owned by third parties, exist in our technology areas. Such third parties may claim that we infringe their patents. Because patent applications can take several years to result in a patent issuance, there may be currently pending applications,

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unknown to us, which may later result in issued patents that our technologies may infringe. For example, we are aware of competitors with patents in technology areas applicable to our optical test equipment products. Such competitors may allege that we infringe these patents. There could also be existing patents of which we are not aware that our technologies may inadvertently infringe. If third parties assert claims against us alleging that we infringe their patents or other intellectual property rights including third parties that have asserted claims against businesses that we have acquired, prior to our acquisition of these businesses we could incur substantial costs and diversion of management resources in defending these claims, and the defense of these claims could have a material adverse effect on our business, financial condition and results of operations. In addition, if third parties assert claims against us and we are unsuccessful in defending against these claims, these third parties may be awarded substantial damages as well as injunctive or other equitable relief against us, which could effectively block our ability to make, use, sell, distribute or market our products and services in the United States or abroad.

Commercial application of nanotechnologies in particular, or technologies involving nanomaterials, is new and the scope and breadth of patent protection is uncertain. Consequently, the patent positions of companies involved in nanotechnologies have not been tested, and there are complex legal and factual questions for which important legal principles will be developed or may remain unresolved. In addition, it is not clear whether such patents will be subject to interpretations or legal doctrines that differ from conventional patent law principles. Changes in either the patent laws or in interpretations of patent laws in the United States and other countries may diminish the value of our nanotechnology-related intellectual property. Accordingly, we cannot predict the breadth of claims that may be allowed or enforced in our nanotechnology-related patents or in third party patents.

In the event that a claim relating to intellectual property is asserted against us, or third parties not affiliated with us hold pending or issued patents that relate to our products or technology, we may seek licenses to such intellectual property or challenge those patents. However, we may be unable to obtain these licenses on commercially reasonable terms, if at all, and our challenge of the patents may be unsuccessful. Our failure to obtain the necessary licenses or other rights could prevent the sale, manufacture or distribution of our products and, therefore, could have a material adverse effect on our business, financial condition and results of operations.

A substantial portion of our technology is subject to retained rights of our licensors, and we may not be able to prevent the loss of those rights or the grant of similar rights to third parties.

A substantial portion of our technology is licensed from academic institutions, corporations and government agencies. Under these licensing arrangements, a licensor may obtain rights over the technology, including the right to require us to grant a license to one or more third parties selected by the licensor or that we provide licensed technology or material to third parties for non-commercial research. The grant of a license for any of our core technologies to a third party could have a material and adverse effect on our business. In addition, some of our licensors retain certain rights under the licenses, including the right to grant additional licenses to a substantial portion of our core technology to third parties for non-commercial academic and research use. It is difficult to monitor and enforce such non-commercial academic and research uses, and we cannot predict whether the third-party licensees would comply with the use restrictions of such licenses. We have incurred and could incur substantial expenses to enforce our rights against them. We also may not fully control the ability to assert or defend those patents or other intellectual property which we have licensed from other entities, or which we have licensed to other entities.

In addition, some of our licenses with academic institutions give us the right to use certain technology previously developed by researchers at these institutions. In certain cases we also have the right to practice improvements on the licensed technology to the extent they are encompassed by the licensed patents and are within our field of use. Our licensors may currently own and may in the future obtain additional patents and patent applications that are necessary for the development, manufacture and commercial sale of our anticipated products. We may be unable to agree with one or more academic institutions from which we have obtained licenses whether certain intellectual property developed by researchers at these academic institutions is covered by our existing licenses. In the event that the new intellectual property is not covered by our existing licenses, we

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would be required to negotiate a new license agreement. We may not be able to reach agreement with current or future licensors on commercially reasonable terms, if at all, or the terms may not permit us to sell our products at a profit after payment of royalties, which could harm our business.

Some of our patents may cover inventions that were conceived or first reduced to practice under, or in connection with, U.S. government contracts or other federal funding agreements. With respect to inventions conceived or first reduced to practice under a federal funding agreement, the U.S. government may retain a non-exclusive, non-transferable, irrevocable, paid-up license to practice or have practiced for or on behalf of the United States the invention throughout the world. We may not succeed in our efforts to retain title in patents, maintain ownership of intellectual property or in limiting the U.S. government s rights in our proprietary technologies and intellectual property when there exists an issue as to whether such intellectual property was developed in the performance of a federal funding agreement or developed at private expense.

RISKS RELATING TO OUR COMMON STOCK

We may not be able to comply with all applicable listing requirements or standards of the NASDAQ Capital Market and NASDAQ could delist our common stock.

Our common stock is listed on the NASDAQ Capital Market. In order to maintain that listing, we must satisfy minimum financial and other continued listing requirements and standards. There can be no assurances that we will be able to comply with applicable listing standards. In the event that our common stock is not eligible for quotation on another market or exchange, trading of our common stock could be conducted in the over-the-counter market or on an electronic bulletin board established for unlisted securities such as the Pink Sheets or the OTC Bulletin Board. In such event, it could become more difficult to dispose of, or obtain accurate price quotations for, our common stock, and there would likely also be a reduction in our coverage by security analysts and the news media, which could cause the price of our common stock to decline further. Also, it may be difficult for us to raise additional capital if we are not listed on a major exchange.

Our common stock price has been volatile and we expect that the price of our common stock will fluctuate substantially in the future, which could cause you to lose all or a substantial part of your investment.

The public trading price for our common stock is volatile and may fluctuate significantly. For example, since January 1, 2009, our common stock has traded between a high of $5.00 per share and a low of $0.26 per share. Among the factors, many of which we cannot control, that could cause material fluctuations in the market price for our common stock are:

- changes in earnings estimates, investors perceptions, recommendations by securities analysts or our failure to achieve analysts earnings estimates;
- changes in our status as an entity eligible to receive SBIR contracts and grants;
- quarterly variations in our or our competitors results of operations;
- general market conditions and other factors unrelated to our operating performance or the operating performance of our competitors;
- announcements by us, or by our competitors, of acquisitions, new products, significant contracts, commercial relationships or capital commitments;
- litigation, such as our settled litigation with Hansen;
- any major change in our board of directors or management or any competing proxy solicitations for director nominees;

changes in governmental regulations or in the status of our regulatory approvals;

announcements related to patents issued to us or our competitors;

a lack of, limited or negative industry or securities analyst coverage;

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discussions of our company or our stock price by the financial and scientific press and online investor communities such as chat rooms; and

general developments in our industry.

In addition, the stock prices of many technology companies have experienced wide fluctuations that have often been unrelated to the operating performance of those companies. These factors may materially and adversely affect the market price of our common stock.

If there are substantial sales of our common stock, or the perception that such sales may occur, our stock price could decline.

If any of our stockholders were to sell substantial amounts of our common stock, the market price of our common stock may decline, which might make it more difficult for us to sell equity or equity-related securities in the future at a time and price that we deem appropriate. Substantial sales of our common stock, or the perception that such sales may occur, may have a material adverse effect on the prevailing market price of our common stock.

Carilion, Dr. Kent Murphy and certain other stockholders have rights to require us, subject to certain conditions, to file one or more registration statements providing for the sale of up to an aggregate of approximately 6.4 million shares of our common stock, which number includes approximately 1.3 million shares of common stock issuable to Carilion upon conversion of shares of Series A Preferred Stock it currently holds, or to include their shares in registration statements that we may file for ourselves or other stockholders. Once we register the issuance of these shares, they can generally be freely sold in the public market.

Dr. Murphy currently owns approximately 2.8 million shares of our common stock. In connection with Dr. Murphy s resignation as our chief executive officer, he has agreed that, subject to certain conditions, he may only request the registration of up to 800,000 shares of common stock through December 31, 2011, and that he will not make any open market sales of his common stock pursuant to the exemption from registration provided by Rule 144 under the Securities Act during this period. However, these restrictions expire at the end of 2011, after which time Dr. Murphy will once again have the contractual ability to cause us to register all remaining shares that he owns at that time and sell under Rule 144.

Certain of our employees, including some of our executive officers, previously entered into agreements with us that restricted their ability to sell shares of our common stock beyond specified amounts through December 31, 2010. These contractual restrictions are no longer in force and therefore the employees will be able to sell their shares into the market subject to compliance with securities laws.

We cannot assure you that Carilion, Dr. Murphy or any of our other significant stockholders will not seek to sell their shares now that the contractual restrictions on their ability to do so have lapsed, or at any other time that could have an adverse effect on the market price of our stock.

If our internal controls over financial reporting are found not to be effective or if we make disclosure of existing or potential significant deficiencies or material weaknesses in those controls, investors could lose confidence in our financial reports, and our stock price may be adversely affected.

Section 404 of the Sarbanes-Oxley Act of 2002 requires us to include an internal control report with our Annual Report on Form 10-K. That report must include management s assessment of the effectiveness of our internal control over financial reporting as of the end of the fiscal year.

We evaluate our existing internal control over financial reporting based on the framework issued by the Committee of Sponsoring Organizations of the Treadway Commission. During the course of our ongoing evaluation of the internal controls, we may identify areas requiring improvement, and may have to design

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enhanced processes and controls to address issues identified through this review. Remedying any deficiencies, significant deficiencies or material weaknesses that we identify may require us to incur significant costs and expend significant time and management resources. We cannot assure you that any of the measures we implement to remedy any such deficiencies will effectively mitigate or remedy such deficiencies. Investors could lose confidence in our financial reports, and our stock price may be adversely affected, if our internal controls over financial reporting are found not to be effective by management or if we make disclosure of existing or potential significant deficiencies or material weaknesses in those controls.

Our directors and executive officers collectively control approximately 43% of our outstanding common stock and if they choose to act together, they can significantly influence our management and operations in a manner that may be in their best interests and not in the best interests of other stockholders.

As of the date of this report, our directors and executive officers, together with their affiliates, collectively own an aggregate of approximately 43% of our outstanding common stock, determined on an as-converted basis. As a result, these stockholders, if they were to act together, will be able to significantly influence our management and affairs and all matters requiring stockholder approval, including the election of directors and approval of mergers or other significant corporate transactions. You and other stockholders will have minimal influence over these actions. The interests of this group of stockholders may not always coincide with our interests or the interests of other stockholders, and this group may act in a manner that advances their best interests and not necessarily those of other stockholders. This concentration of ownership may also have the effect of delaying or preventing a change in control of our company and might adversely affect the market price of our common stock.

Anti-takeover provisions in our amended and restated certificate of incorporation and bylaws and Delaware law could discourage or prevent a change in control, even if an acquisition would be beneficial to our stockholders, which could affect our stock price adversely and prevent attempts by our stockholders to replace or remove our current management.

Our amended and restated certificate of incorporation and bylaws and Delaware law contain provisions that might delay or prevent a change in control, discourage bids at a premium over the market price of our common stock and adversely affect the market price of our common stock and the voting and other rights of the holders of our common stock. These provisions include:

- a classified board of directors serving staggered terms;
- advance notice requirements to stockholders for matters to be brought at stockholder meetings;
- a supermajority stockholder vote requirement for amending certain provisions of our amended and restated certificate of incorporation and bylaws; and
- the right to issue preferred stock without stockholder approval, which could be used to dilute the stock ownership of a potential hostile acquirer.

We are also subject to provisions of the Delaware corporation law that, in general, prohibit any business combination with a beneficial owner of 15% or more of our common stock for five years unless the holder s acquisition of our stock was approved in advance by our board of directors.

The existence of these provisions could adversely affect the voting power of holders of common stock and limit the price that investors might be willing to pay in the future for shares of our common stock.

We may become involved in securities class action litigation that could divert management s attention and harm our business and our insurance coverage may not be sufficient to cover all costs and damages.

The stock market has from time to time experienced significant price and volume fluctuations that have affected the market prices for the common stock of technology companies. These broad market fluctuations may

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cause the market price of our common stock to decline. In the past, following periods of volatility in the market price of a particular company s securities, securities class action litigation has often been brought against that company. We may become involved in this type of litigation in the future. Litigation often is expensive and diverts management s attention and resources, which could adversely affect our business.

ITEM 1B. UNRESOLVED STAFF COMMENTS

Not applicable.

ITEM 2. PROPERTIES

We lease approximately 24,000 square feet of space in Roanoke, Virginia from Carilion Clinic, our largest institutional stockholder. This property is used for our corporate headquarters and our SCC group, as well as for general administrative functions.

We lease approximately 32,000 square feet of space in Blacksburg, Virginia, near Virginia Tech, which is used by both our Technology Development segment and our Products and Licensing segment.

We lease approximately 16,000 square feet of space in Charlottesville, Virginia, near the University of Virginia, for use by certain groups in our Technology Development segment.

We own a 24,000 square foot facility in Danville, Virginia. This property was previously the subject of a lease with the city, and we exercised a purchase option during 2010 to acquire the building for approximately $70,000. Our Technology Development segment primarily uses this facility for nanomaterials research and development and manufacturing.

We believe that our existing facilities are adequate for our current needs and suitable additional or substitute space will be available as needed to accommodate expansion of our operations.

ITEM 3. LEGAL PROCEEDINGS

From time to time, we may become involved in litigation or claims arising out of our operations in the normal course of business. Management currently believes the amount of ultimate liability, if any, with respect to these actions will not materially affect our financial position, results of operations, or liquidity.

ITEM 4. RESERVED

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PART II

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

PRICE RANGE OF COMMON STOCK

Our common stock traded on The NASDAQ Global Market under the symbol LUNA until September 8, 2009. Since that date we have traded on The NASDAQ Capital Market. The following table sets forth the high and low closing prices of our common stock for each period indicated and are as reported by NASDAQ.

	2010		2009	
Fiscal Period	**High**	**Low**	**High**	**Low**
First Quarter	$ 4.50	$ 2.20	$ 2.36	$ 1.01
Second Quarter	$ 2.51	$ 2.01	$ 1.85	$ 0.43
Third Quarter	$ 2.25	$ 1.77	$ 2.59	$ 0.30
Fourth Quarter	$ 2.10	$ 1.67	$ 2.38	$ 1.15

As of December 31, 2010, there were approximately 2,300 stockholders of record of our common stock. The number of holders of record of our common stock does not reflect the number of beneficial holders whose shares are held by depositories, brokers or other nominees.

STOCK PERFORMANCE GRAPH

The graph set forth below compares the cumulative total stockholder return on our common stock between June 2, 2006, the date our common stock commenced trading on the NASDAQ Global Market (we transferred to the NASDAQ Capital Market in 2009), and December 31, 2010, versus the cumulative total return of the NASDAQ Composite Index and the Russell 2000 Index over the same period. This graph assumes the investment of $100,000 in our common stock at the closing price of the market on June 2, 2006, and an equivalent amount in the NASDAQ Composite Index and the Russell 2000 Index on that date, and assumes the reinvestment of dividends, if any. We have never paid dividends on our common stock and have no present plans to do so.

Since there is no published industry or line-of-business index for our business reflective of our performance, nor do we believe we can reasonably identify a peer group, we measure our performance against issuers with similar market capitalizations. We selected the Russell 2000 Index because it measures the performance of a broad range of companies with lower market capitalizations than those companies included in the S&P 500 Index.

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The comparisons shown in the graph below are required by the Securities and Exchange Commission and are based upon historical data. We caution that the stock price performance shown in the graph below is not necessarily indicative of, nor is it intended to forecast, the potential future performance of our common stock.

The preceding Stock Performance Graph is not deemed filed with the Securities and Exchange Commission and shall not be incorporated by reference in any of our filings under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date hereof and irrespective of any general incorporation language in any such filing.

DIVIDEND POLICY

Since our inception, we have never declared or paid any cash dividends on our common stock. We currently expect to retain any future earnings for use in the operation and expansion of our business, and therefore do not anticipate paying any cash dividends in the foreseeable future. In addition, our line of credit facility with Silicon Valley Bank restricts us from paying cash dividends on our capital stock without the bank s prior written consent.

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ITEM 6. SELECTED FINANCIAL DATA

The consolidated statement of operations data for each of the three years in the period ended December 31, 2010 and the consolidated balance sheet data as of December 31, 2009 and 2010 have been derived from our audited consolidated financial statements appearing elsewhere in this report. The consolidated statement of operations data for the years ended December 31, 2006 and 2007 and the consolidated balance sheet data as of December 31, 2006, 2007 and 2008 have been derived from our audited consolidated financial statements that do not appear in this report. The following selected consolidated financial data should be read in conjunction with our consolidated financial statements and the accompanying notes and Management s Discussion and Analysis of Financial Condition and Results of Operations included at Part II, Item 7 in this Annual Report on Form 10-K. The selected data in this section is not intended to replace the consolidated financial statements, and the historical results are not necessarily indicative of the results to be expected in any future period.

	Years ended December 31,				
In thousands, except share and per share data	**2006**	**2007**	**2008**	**2009 (a)**	**2010**
Consolidated Statement of Operations Data:					
Revenues:					
Technology Division revenues	$ 18,788	$ 23,356	$ 26,518	$ 25,198	$ 22,405
Products sales and licensing revenues	4,758	10,326	10,380	9,374	12,133
Total revenues	23,546	33,682	36,898	34,572	34,538
Cost of revenues:					
Technology development division costs	14,141	16,546	17,367	17,032	15,808
Product sales and licensing costs	2,221	4,820	5,490	4,784	5,787
Total cost of revenues	16,362	21,366	22,858	21,815	21,595
Gross profit	7,184	12,316	14,041	12,757	12,944
Operating expense	17,150	20,570	21,335	30,200	14,992
Operating loss	(9,966)	(8,254)	(7,294)	(17,444)	(2,049)
Other income, net	26	33	1,198	1	77
Interest income (expense), net	516	372	(190)	(504)	(474)
Loss before reorganization items and income tax	(9,424)	(7,850)	(6,286)	(17,947)	(2,446)
Reorganization Costs				1,898	174
Loss before income tax	(9,424)	(7,850)	(6,286)	(19,845)	(2,620)
Income tax (benefit) expense	13			600	
Net loss	(9,437)	(7,850)	(6,286)	(20,445)	(2,620)
Preferred stock dividend					361
Net loss attributable to common stockholders	$ (9,437)	$ (7,850)	$ (6,286)	$ (20,445)	$ (2,981)
Net loss per common share:					
Basic	$ (1.14)	$ (0.77)	$ (0.57)	$ (1.82)	$ (0.23)
Diluted	$ (1.14)	$ (0.77)	$ (0.57)	$ (1.82)	$ (0.23)
Weighted-average number of shares used in per share calculations:					
Basic	8,283,074	10,219,711	10,974,010	11,232,716	13,009,326
Diluted	8,283,074	10,219,711	10,974,010	11,232,716	13,009,326

	December 31,				
	2006	**2007**	**2008**	**2009**	**2010**
Consolidated Balance Sheet Data:					
Cash and cash equivalents	$ 17,867	$ 12,047	$ 15,519	$ 5,229	$ 7,217
Working capital	19,283	14,115	14,992	16,529	8,055
Total assets	35,217	32,549	34,017	21,758	22,876
Total current liabilities	7,560	10,053	11,129	5,556	10,648
Total debt	5,328	5,000	10,000	5,000	6,307

(a) In April 2009, a jury awarded Hansen Medical Inc. (Hansen) a judgment of $36.3 million following a trial. In January 2010, we and Hansen entered into a settlement agreement that reduced our liability to $9.7 million. This amount was recognized in operating expenses for the year ended December 31, 2009 and is included in accrued liabilities at December 31, 2009. As a result of the jury award, we performed an interim goodwill and intangible asset impairment analysis. As a result of this analysis, we recognized an impairment of $1.3 million during the quarter ended March 31, 2009. We also determined that our remaining deferred tax asset was no longer likely to be realized and placed a valuation allowance of $0.6 million against the asset. On July 17, 2009, we filed a voluntary petition for relief in order to reorganize under Chapter 11 of the United States Bankruptcy Code. As a result of this action, we incurred significant legal expenses that are included in reorganization expenses for the year ended December 31, 2009 in the table above.

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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 in conjunction with our consolidated financial statements and the related notes to those statements included elsewhere in this report. In addition to historical financial information, the following discussion and analysis contains forward-looking statements that involve risks, uncertainties and assumptions. Our actual results and timing of selected events may differ materially from those anticipated in these forward-looking statements as a result of many factors, including those discussed under Risk factors and elsewhere in this report.

Business Overview

We research, develop and commercialize innovative technologies in three primary areas of focus: test & measurement, sensing, and instrumentation; secure computing and communications; and healthcare.

Our business model is designed to accelerate the process of bringing new and innovative products to market. We use our in-house technical expertise across a range of technologies to perform applied research services on government-funded projects and also for corporate customers in the fiber-optic sensing area. We continue to invest in product development and commercialization, which we anticipate will lead to increased product sales growth.

We are organized into two business segments, our Technology Development segment and our Products and Licensing segment. Our Technology Development segment, which includes our secure computing and communications group that we refer to as SCC, performs applied research for government-funded projects and comprised approximately 72%, 73% and 65% of our total revenues for the years ended December 31, 2008, 2009 and 2010, respectively. Most of the government funding in the part of our Technology Development segment outside of SCC is derived from the Small Business Innovation Research, or SBIR, program coordinated by the U.S. Small Business Administration, or SBA. Our SBIR research is focused on technological areas with commercial potential, and we strive to commercialize any resulting scientific advancements. Our SCC group provides innovative solutions designed to secure critical technologies within U.S. government systems, including the protection of deployed hardware and software systems and the communications between them. SCC both conducts applied research and provides services to the government in this area. SCC s revenue is primarily derived from non-SBIR U.S. government contracts and purchase orders. SCC s revenues have grown substantially over the last several years, a trend that we expect to continue as the government increases spending on cyber-security initiatives. Our Technology Development segment also performs applied research in the areas of sensing and materials.

Our Products and Licensing segment focuses on fiber-optic test and measurement, sensing and instrumentation products and also conducts applied research in the fiber-optic sensing area for both corporate and government customers. The Products and Licensing segment also commercializes healthcare products. Our Product and Licensing revenues represented approximately 28%, 27% and 35% of our total revenues for the years ended December 31, 2008, 2009 and 2010, respectively.

We generate revenues through technology development services provided under contractual arrangements, product sales, product development under contractual relationships and license fees. Our Technology Development segment revenues have historically accounted for a large portion of our total revenues, and we expect that they will continue to represent a significant portion of our total revenues for the foreseeable future. Our Technology Development revenues, however, decreased from $26.5 million in 2008 to $25.2 million in 2009 and further decreased to $22.4 million in 2010. This decline in revenues corresponded with a drop in the rate at which we received new research contract awards contemporaneously with our Chapter 11 reorganization in 2009 and early 2010. Within our Technology Development segment, some groups appear to be continuing to experience program win rates below their historical averages, while other groups, most notably SCC and our optical systems group, are seeing significant growth in new programs, creating an offsetting effect when considering total revenues for this segment. We expect SCC and the optical systems group to continue to grow in 2011.

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Within the Technology Development segment, we have historically had a backlog of contracts for which work has been scheduled, but for which a specified portion of work has not yet been completed. We define backlog as the dollar amount of obligations payable to us under negotiated contracts upon completion of a specified portion of work that has not yet been completed, exclusive of revenues previously recognized for work already performed under these contracts, if any. Total backlog includes funded backlog, which is the amount for which money has been directly authorized by the U.S. Congress and for which a purchase order has been received by a commercial customer, and unfunded backlog, representing firm orders for which funding has not yet been appropriated. Indefinite delivery and quantity contracts and unexercised options are not reported in total backlog. The approximate value of our Technology Development backlog was $26.3 million at December 31, 2010, compared to $19.6 million at December 31, 2009.

Revenues from product sales currently represent a smaller portion of our total revenues, and, historically, we have derived most of these revenues from the sales of our sensing systems and products that make use of light-transmitting optical fibers, or fiber optics. We continue to invest in product development and commercialization, which we anticipate will lead to increased product sales growth. Although we have been successful in licensing certain technology in past years, we do not expect license revenues to represent a significant portion of future revenues. Over time, however, we do intend to gradually increase such revenues. In the near term, we expect revenues from product sales and product development to be primarily in areas associated with our fiber optic instrumentation and test and measurement platforms. In the long term, we expect that revenues from product sales will represent a larger portion of our total revenues and that as we develop and commercialize new products, these revenues will reflect a broader and more diversified mix of products.

We incurred net losses attributable to common stockholders of approximately $6.3 million, $20.4 million and $3.0 million for the years ended December 31, 2008, 2009, and 2010, respectively. The significant net loss for 2009 was primarily attributable to the costs incurred with respect to our litigation with Hansen and subsequent Chapter 11 reorganization. We settled our litigation and emerged from bankruptcy in January 2010 and, accordingly, we did not incur significant reorganization or related litigation costs in 2010.

We expect to continue to incur increasing expenses as we expand our business, including expenses for research and development, sales and marketing and manufacturing capabilities. We may also grow our business in part through acquisitions of additional companies and complementary technologies, which could cause us to incur transaction expenses, amortization or write-offs of intangible assets and other acquisition-related expenses. As a result, we expect to incur net losses for the foreseeable future, and these losses could be substantial.

There was a rapid softening of the economy and tightening of the financial markets in the second half of 2008 that continued into 2010. This slowing of the economy has reduced the financial capacities of our customers and possibly our potential customers, thereby slowing spending on the products and services we provide. The outlook for the economy for 2011 remains uncertain.

Chapter 11 Reorganization and Settlement with Hansen

On July 17, 2009, we filed for reorganization under Chapter 11 of the United States Bankruptcy Code. During the period from the filing date until January 12, 2010, the date we emerged from bankruptcy, we operated as a Debtor in Possession. As a result of these Chapter 11 filings, actions to collect pre-petition indebtedness and the pending Hansen litigation were stayed. In addition, under the Bankruptcy Code we had the right to assume or reject executory contracts, including real estate leases, employment contracts, personal property leases, service contracts and other unexpired executory pre-petition contracts, subject to court approval. We did not reject any such contracts in our Chapter 11 plan as confirmed by the court.

Our plan of reorganization was confirmed by the bankruptcy court on January 12, 2010, and we emerged from bankruptcy on that date.

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In December 2009 we entered into a settlement agreement with Hansen, which reduced our liability with respect to our outstanding litigation to $9.7 million. As part of the settlement, in January 2010 we issued to Hansen a $5.0 million secured promissory note, approximately 1.3 million shares of our common stock and a warrant entitling Hansen to purchase, until January 12, 2013, a number of shares of our common stock as necessary for Hansen to maintain a 9.9% ownership interest in our common stock, at an exercise price of $0.01 per share. We also entered into a supply and development agreement with Hansen as well as certain license agreements, and we entered into an amendment to our supply and development agreement with Intuitive Surgical which, among other things, amended the license agreement with Intuitive to conform the license to the agreement with Hansen.

The Hansen litigation, including settlement efforts, resulted in significant legal expenses and related costs that are included in operating expenses for the year ended December 31, 2009. The Chapter 11 reorganization also resulted in significant legal expenses and related costs that are included in reorganization expenses for the year ended December 31, 2009. While we incurred certain expenses for both our Chapter 11 reorganization and the Hansen litigation during the year ended December 31, 2010, these amounts were not material.

Description of Our Revenues, Costs and Expenses

Revenues

We generate revenues from technology development, product sales and commercial product development and licensing activities. We derive technology development revenues from providing research and development services to third parties, including government entities, academic institutions and corporations, and from achieving milestones established by some of these contracts and in collaboration agreements. In general, we complete contracted research over periods ranging from six months to three years, and recognize these revenues over the life of the contract as costs are incurred or upon the achievement of certain milestones built into the contracts. Our technology development revenues represented approximately 73% and 65% of our total revenues for the years ended December 31, 2009 and 2010, respectively.

Our product and license revenues reflect amounts that we receive from sales of our products or development of products for third parties, as well as fees paid to us in connection with licenses or sublicenses of certain patents and other intellectual property, and represented approximately 27% and 35% of our total revenues for the years ended December 31, 2009 and 2010, respectively.

Cost of Revenues

Cost of revenues associated with technology development revenues consists of costs associated with performing the related research activities including direct labor, amounts paid to subcontractors and overhead allocated to technology development activities.

Cost of revenues associated with product sales and license revenues consists of license fees for use of certain technologies; product manufacturing costs including all direct material and direct labor costs; amounts paid to our contract manufacturers; manufacturing, shipping and handling; provisions for product warranties; and inventory obsolescence, as well as overhead allocated to each of these activities.

Operating Expense

Operating expense consists of selling, general and administrative expenses, as well as expenses related to research, development and engineering, depreciation of fixed assets and amortization of intangible assets. These expenses also include compensation for employees in executive and operational functions including certain non-cash charges related to expenses from option grants, facilities costs, professional fees, salaries, commissions, travel expense and related benefits of personnel engaged in sales, product management and marketing activities; costs of marketing programs and promotional materials; salaries, bonuses and related benefits of personnel

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engaged in our own research and development beyond the scope and activities of our Technology Development segment; product development activities not provided under contracts with third parties; and overhead costs related to these activities.

Litigation Reserve

As further described elsewhere in this report, in April 2009 as part of our litigation with Hansen, a jury found in favor of Hansen on certain of its claims against us and awarded a verdict for $36.3 million against us. We established a litigation reserve for this amount on our financial statements pending final resolution of the matter, which was recorded as other expense during the first quarter of 2009.

In January 2010, we concluded the settlement of our litigation with Hansen and issued to Hansen a secured promissory note in the principal amount of $5.0 million as well as 1,247,330 shares of our common stock, with a fair value of approximately $4.7 million, based on the closing price of our common stock on January 11, 2010. Therefore, in the fourth quarter of 2009 we adjusted the prior litigation reserve downward to $9.7 million. This adjustment was recorded on our statement of operations as a reduction of operating expenses during the fourth quarter of 2009.

Interest Income/Expense

In 2008, we entered into a $10 million debt facility with Silicon Valley Bank. At December 31, 2008, a $5.0 million term loan was outstanding under this facility. On July 15, 2009, we repaid the outstanding balance of the term loan and terminated the credit facility. In February 2010, we entered into a new line of credit facility with Silicon Valley Bank with a borrowing capacity of $5.0 million. As of December 31, 2010, we had borrowed $2.5 million under the line of credit.

During 2009 and 2010, interest expense included interest accrued on our outstanding bank credit facilities, as well as interest incurred with respect to our capital lease obligations. During 2009, we also incurred interest costs associated with our 6% senior convertible notes issued to Carilion with outstanding principal of $5.0 million as of December 31, 2009. These notes were converted into shares of newly designated Series A Preferred Stock during January 2010.

Interest income includes amounts earned on our cash deposits with financial institutions.

Reorganization Costs

Reorganization costs of approximately $1.9 million in our statement of operations for the year ended December 31, 2009 consist of legal fees, claims processing and other costs directly associated with our Chapter 11 proceedings. We emerged from bankruptcy in January 2010 and incurred approximately $174,000 in related reorganization costs for the year ended December 31, 2010.

Critical Accounting Policies and Estimates

Technology Development Revenues

We perform research and development for U.S. Federal government agencies, educational institutions and commercial organizations. We recognize revenue under research contracts when a contract has been executed, the contract price is fixed and determinable, delivery of services or products has occurred, and collectability of the contract price is considered probable and can be reasonably estimated. Revenue is earned under cost reimbursable, time and materials and fixed price contracts. Direct contract costs are expensed as incurred.

Under cost reimbursable contracts, we are reimbursed for costs that are determined to be reasonable, allowable and allocable to the contract and paid a fixed fee representing the profit negotiated between us and the

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contracting agency. Revenue from cost reimbursable contracts is recognized as costs are incurred plus an estimate of applicable fees earned. We consider fixed fees under cost reimbursable contracts to be earned in proportion to the allowable costs incurred in performance of the contract.

Revenue from time and materials contracts is recognized based on direct labor hours expended at contract billing rates plus other billable direct costs.

Fixed price contracts may include either a product delivery or specific service performance throughout a period. For fixed price contracts that are based on the proportional performance method and involve a specified number of deliverables, we recognize revenue based on the proportion of the cost of the deliverables compared to the cost of all deliverables included in the contract as this method more accurately measures performance under these arrangements. For fixed price contracts that provide for the development and delivery of a specific prototype or product, revenue is recognized based upon the percentage of completion method.

Our contracts with agencies of the U.S. government are subject to periodic funding by the respective contracting agency. Funding for a contract may be provided in full at inception of the contract or ratably throughout the contract as the services are provided. In evaluating the probability of funding for purposes of assessing collectability of the contract price, we consider our previous experience with our customers, communication with our customers regarding funding status and our knowledge of available funding for the contract or program. If funding is not assessed as probable, revenue recognition is deferred until realization is deemed probable.

Contract revenue recognition inherently involves estimation, including the contemplated level of effort to accomplish the tasks under the contract, the cost of the effort and an ongoing assessment of progress toward completing the contract. From time to time, as part of normal management processes, facts may change, causing revisions to estimated total costs or revenues expected. The cumulative impact of any revisions to estimates and the full impact of anticipated losses on any type of contract are recognized in the period in which they become known.

The underlying bases for estimating our contract research revenues are measurable expenses, such as labor, subcontractor costs and materials, and data that are updated on a regular basis for purposes of preparing our cost estimates. Our research contracts generally have a period of performance of six to 18 months, and our estimates of contract costs have historically been consistent with actual results. Revisions in these estimates between accounting periods to reflect changing facts and circumstances have not had a material impact on our operating results, and we do not expect future changes in these estimates to be material.

Whether certain costs under government contracts are allowable is subject to audit by the government. Certain indirect costs are charged to contracts using provisional or estimated indirect rates, which are subject to later revision based on government audits of those costs. Management is of the opinion that costs subsequently disallowed, if any, would not be significant.

Product and Licensing Revenues

We recognize revenue relating to our product sales when persuasive evidence of an arrangement exists, delivery has occurred, the selling price is fixed or determinable and collectability of the resulting receivable is reasonably assured. We evaluate product sales that are a part of multiple-element revenue arrangements to determine whether separate units of accounting exist, and we follow appropriate revenue recognition policies for each separate unit. For multi-element arrangements that include tangible products that contain software that is essential to the tangible product s functionality, we allocate revenue to all deliverables based on their relative selling prices. In such circumstances, we use a hierarchy to determine the selling price to be used for allocating revenue to deliverables: (i) vendor-specific objective evidence of fair value (VSOE), (ii) third-party evidence of selling price (TPE), and (iii) best estimate of the selling price (ESP). VSOE generally exists only when we sell the deliverable separately and is the price actually charged by us for that deliverable. ESPs reflect our best estimates of what the selling prices of elements would be if they were sold regularly on a stand-alone basis.

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Our process for determining ESP for deliverables without VSOE or TPE considers multiple factors that may vary depending upon the unique facts and circumstances related to each deliverable. Key factors considered in developing the ESPs include prices charged by us for similar offerings, our historical pricing practices, the nature of the deliverables, and the relative ESP of all of the deliverables as compared to the total selling price of the product. We may also consider, when appropriate, the impact of other products and services, on selling price assumptions when developing and reviewing our ESPs

Income Taxes

We estimate our tax liability through calculating our current tax liability, together with assessing temporary differences resulting from the different treatment of items for tax and accounting purposes. These differences result in deferred tax assets and liabilities, which we record on our balance sheet. Management then assesses the likelihood that deferred tax assets will be recovered in future periods. In assessing the need for a valuation allowance against the net deferred tax asset, management considers factors such as future reversals of existing taxable temporary differences, taxable income in prior carry back years, whether carry back is permitted under the tax law, tax planning strategies and estimated future taxable income exclusive of reversing temporary differences and carry forwards. To the extent that we cannot conclude that it is more likely than not that the benefit of such assets will be realized, we establish a valuation allowance to reduce their net carrying value.

As we assess our projections of future taxable income or other factors that may impact our ability to generate taxable income in future periods, our estimate of the required valuation allowance may change, which could have a material impact on future earnings or losses.

We recognize tax benefits from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by taxing authorities. While it is often difficult to predict the final outcome of timing of the resolution of any particular tax matter, we establish a liability at the time we determine it is probable we will be required to pay additional taxes related to certain matters. These liabilities are recorded in accrued liabilities in our consolidated balance sheets. We adjust this provision, including any impact on the related interest and penalties, in light of changing facts and circumstances, such as the progress of a tax audit. A number of years may elapse before a particular matter for which we have established a liability is audited and finally resolved. The number of years with open tax audits varies depending on the tax jurisdiction. Settlement of any particular issue would usually require the use of cash. We recognize favorable resolutions of tax matters for which we have previously established liabilities as a reduction to our income tax expense when the amounts involved become known.

Due to differences between federal and state tax law, and accounting principles generally accepted in the United States of America, or GAAP, certain items are included in the tax return at different times than when those items are reflected in the consolidated financial statements. Therefore, the annual tax rate reflected in our consolidated financial statements is different than that reported in our tax return. Some of these differences are permanent, such as expenses that are not deductible in our tax return. Some differences, such as depreciation expense, reverse over time and create deferred tax assets and liabilities. The tax rates used to determine deferred tax assets or liabilities are the enacted tax rates in effect for the year in which the differences are expected to reverse. Based on the evaluation of all available information, we recognize future tax benefits, such as net operating loss carry forwards, to the extent that realizing these benefits is considered more likely than not.

Stock-Based Compensation

We recognize compensation expense based upon the fair value of the underlying equity award on the date of the grant. We have elected to use the Black-Scholes option pricing model to value any awards granted. We amortize stock-based compensation for such awards on a straight-line basis over the related service period of the awards taking into account the effects of the employees expected exercise and post-vesting employment termination behavior. To compute the volatility used in this model, we use the lifetime volatility of our common stock.

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Long-lived and Intangible Assets

Long-lived assets and certain identifiable intangibles are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset might not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset to future undiscounted net cash flows expected to be generated by the asset. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the asset exceeds the fair value of the asset. Assets to be disposed of are reported at the lower of the carrying amount or fair value, less cost to sell.

Results of Operations

The following table shows information derived from our consolidated statements of operations expressed as a percentage of total revenues for the periods presented.

	Year ended December 31,		
	2008	**2009**	**2010**
Revenues:			
Technology development revenues	71.9%	72.9%	64.9%
Product revenues	28.1%	27.1%	35.1%
Total revenues	100%	100%	100%
Cost of Revenues:			
Technology development costs	47.1%	49.3%	45.8%
Product costs	14.9%	13.8%	16.8%
Total cost of revenues	62.0%	63.1%	62.5%
Gross Profit	38.1%	36.9%	37.5%
Operating Expense	57.8%	87.4%	43.4%
Operating Loss	(19.7)%	(50.5)%	(5.9)%
Total Other Income (Expense), net	2.7%	(1.5)%	(1.1)%
Loss before reorganization items and income tax	(17.0)%	(52.0)%	(7.0)%
Reorganization Costs		5.5%	0.5%
Loss Before Income Taxes	(17.0)%	(57.5)%	(7.5)%
Income Tax Expense		1.7%	

Year Ended December 31, 2010 Compared to Year Ended December 31, 2009

Revenues

Total revenues for the year ended December 31, 2010 were $34.5 million, representing a decrease of $33,000, or 0.1%, from total revenues of $34.6 million for the year ended December 31, 2009.

Our Technology Development segment revenue decreased by $2.8 million, or 11%, from $25.2 million for the year ended December 31, 2009 to $22.4 million for the year ended December 31, 2010. Our activities in this segment were adversely affected by our Chapter 11 reorganization, which resulted in the loss of some awards for development contracts and significant delays in the receipt of other contract awards and the potential revenue from those awards. We also experienced a drop in the rate at which we received new research contract awards contemporaneously with our Chapter 11 reorganization in 2009 and early 2010.

Our Products and Licensing segment revenues for the years ended December 31, 2010 and 2009 were $12.1 million and $9.4 million, respectively, representing an increase of $2.8 million, or 29.4%. Product sales revenue increased by 50% to $8.9 million during the year ended December 31, 2010 from $5.9 million for the year ended December 31, 2009, while revenues in this segment relating to product development activities decreased slightly

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to $3.2 million for the year ended December 31, 2010 from $3.3 million during the year ended December 31, 2009. During both years, product development activities included work under our arrangements with Intuitive and Hansen, as well as arrangements with a number of governmental entities.

Cost of Revenues

Cost of revenues decreased 1% to $21.6 million for the year ended December 31, 2010 from $21.8 million for the year ended December 31, 2009. Cost of revenues for technology development decreased $1.2 million, or 7%, to $15.8 million for the year ended December 31, 2010 from $17.0 million for the year ended December 31, 2009. This decrease primarily resulted from a decline in direct labor hours and other direct costs associated with a reduction or slowing in awards for new long-term development projects during our reorganization in the latter half of 2009.

Product and license cost of revenues increased $1.0 million, or 21%, from $4.8 million to $5.8 million, largely attributable to the 50% increase in product sales during 2010 compared to 2009.

Operating Expense

Operating expense decreased by 50% to $15.0 million for the year ended December 31, 2010 from $30.2 million for the year ended December 31, 2009. A large part of the decrease in operating expense was approximately $9.7 million incurred in 2009 with respect to the litigation settlement with Hansen, as well as $3.7 million in professional fees and other costs associated with that litigation incurred during 2009, and the $1.3 million non-cash impairment charge associated with certain of our intangible assets. Professional fees and other litigation costs incurred during 2010 were approximately $122,000.

Share-based compensation expense was $3.5 million for the year ended December 31, 2010, an increase of $0.3 million, or 9%, over share-based compensation expense of $3.2 million for the year ended December 31, 2009. We account for options granted at fair value on the date of grant and then recognize the compensation expense over the applicable vesting period of the option. This increase is primarily due to the stock options granted in January 2010 to three new non-employee directors and to existing directors in recognition of their service during our reorganization in 2009, as well as stock options granted in May 2010 upon the re-election of another non-employee director. These stock options granted to non-employee directors result in relatively higher annual compensation expense than those generally granted to employees, due to the fact they will vest over 36 months rather than 60 months.

Our research, development, and engineering expense decreased from $2.9 million in the year ended December 31, 2009 to $1.7 million in the year ended December 31, 2010. The primary reason for this decrease was a $0.5 million decrease in expenses our nanomaterials group and the introduction of two new products in our Products group, the OBR 4200 and OVA 5000 in early 2010 for which research, development and engineering expenses had been incurred in prior years.

Interest and Other Income (Expense)

Our net interest expense for the year ended December 31, 2010 was $474,000, down from $504,000 for the year ended December 31, 2009. During 2009, we incurred interest expense on our $5.0 million bank loan into July, as well as interest on the convertible promissory notes issued to Carilion. During 2010, the Carilion notes were converted into stock, and we borrowed $2.5 million against a new $5.0 million line of credit facility with a bank. We paid a fee of 0.5% per year, billed quarterly, for the unused portion of the line of credit.

During 2010, we earned $89,000 of grant revenue under a 2004 grant from the city of Danville, Virginia, which was recorded as other income, compared to $35,000 of other income from this grant during 2009.

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Reorganization Costs

We filed for reorganization on July 17, 2009. Expenses incurred for professional fees and other costs associated with our reorganization were $1.9 million for the year ended December 31, 2009. During the year ended December 31, 2010, we incurred approximately $174,000 of such costs, as our plan of reorganization was approved in January 2010.

Income Tax Expense

As of December 31, 2008, we had recorded a $600,000 deferred tax asset in connection with projected future net operating loss carryforwards. During 2009, we determined that the tax benefit was no longer likely to be realized, as a result of accrued costs related to the Hansen litigation, and we therefore provided for a full valuation allowance against the deferred tax asset, resulting in a $600,000 non-cash tax expense for the year.

Preferred Stock Dividend

In January 2010, we issued 1,321,514 shares of our newly designated Series A Convertible Preferred Stock to Carilion. The Series A Convertible Preferred Stock carries an annual cumulative dividend of 6%, or approximately $0.2815 per share. During 2010, we accrued approximately $361,000 for the dividends payable to Carilion. The dividends are not payable in cash, but rather in shares of our Common Stock, until a liquidation event occurs. During 2010, 76,868 shares of common stock became issuable to Carilion as dividends and have been recorded in the statement of stockholders equity.

Year Ended December 31, 2009 Compared to Year Ended December 31, 2008

Revenues

Total revenues for the year ended December 31, 2009 were $34.6 million, representing a decrease of $2.3 million, or 6.3%, versus revenues of $36.9 million for the year ended December 31, 2008. The decrease was comprised of a $1.5 million, or 6%, decrease in technology development revenue and a $0.8 million, or 8%, decrease in product and license revenue.

Technology development revenue decreased by $1.3 million, or 5%, from $26.5 million for the year ended December 31, 2008 to $25.2 million for the year ended December 31, 2009. We believe that the activities in this segment were adversely impacted by our Chapter 11 reorganization filed in July 2009, which resulted in numerous expected awards for new development contracts being delayed until after our emergence from bankruptcy in 2010.

Product sales, product development, and licensing revenues for the years ended December 31, 2009 and 2008 were $9.4 million and $10.4 million, respectively, representing a decrease of $1.0 million, or 10%. Product development activities included product development work for our arrangement with Intuitive Surgical, Inc., and various arrangements with governmental entities. Product sales revenue decreased by 12% to $5.9 million during the year ended December 31, 2009 from $6.8 million for the year ended December 31, 2008, while revenues in this segment relating to product development activities remained flat at $3.3 million for both years. The general deterioration of the global economy, which began to impact our product sales during the fourth quarter of 2008, continued to have an adverse effect on product sales throughout most of 2009.

Cost of Revenues

Cost of revenues decreased 5% to $21.8 million for the year ended December 31, 2009 from $22.9 million for the year ended December 31, 2008. Cost of revenues for technology development decreased $336,000, or 2%, to $17.0 million for the year ended December 31, 2009 from $17.4 million for the year ended December 31, 2008. This decrease primarily resulted from reduced overhead expenses attributable to this business segment as a result of our initiatives during 2009 to improve efficiency and reduce our costs of operations.

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Product and license cost of revenues decreased $707,000, or 13%, from $5.5 million to $4.8 million, largely attributable to the 10% decrease in product sales during 2009 compared to 2008.

Operating Expense

Operating expense increased to $30.2 million for the year ended December 31, 2009 from $21.3 million for the year ended December 31, 2008, an increase of $8.9 million, or 42%, over 2008. The increase in operating expense was driven by the $9.7 million litigation settlement with Hansen, as well as $3.7 million in professional fees and other costs associated with that litigation incurred during 2009, and the $1.3 million non-cash impairment charge associated with certain of our intangible assets. Professional fees and other litigation costs incurred during 2008 were approximately $2.4 million.

Share-based compensation expense was $3.2 million for the year ended December 31, 2009, an increase of $0.3 million, or 10%, over share-based compensation expense of $2.9 million for the year ended December 31, 2008. We account for options granted at fair value on the date of grant and then recognize the compensation expense over the applicable vesting period of the option.

Interest and Other Income (Expense)

Our net interest expense for the year ended December 31, 2009 was $504,000, up from $190,000 for the year ended December 31, 2008. In May 2008, we borrowed $5.0 million from a bank under a term loan, which was repaid in full in July 2009, and we also incurred interest on the convertible promissory notes issued to Carilion in both years.

For the year ended December 31, 2008, we recognized other income, net, of $1.2 million. The primary components of this other income were $666,000 in net proceeds from a legal settlement and $668,000 earned under the 2004 grant from the city of Danville related to our nanomaterials facility.

Reorganization Costs

We filed for reorganization on July 17, 2009 and incurred $1.9 million in professional fees and other costs associated with our reorganization during the year ended December 31, 2009.

Income Tax Expense

As of December 31, 2008, we had recorded a $600,000 deferred tax asset in connection with projected future net operating loss carryforwards. During 2009, we determined that the tax benefit was no longer likely to be realized, as a result of accrued costs related to the Hansen litigation, and we therefore provided for a full valuation allowance against the deferred tax asset, resulting in a $600,000 non-cash tax expense for the year.

Liquidity and Capital Resources

At December 31, 2010, our total cash and cash equivalents were approximately $7.2 million. During 2010, we entered into a revolving line of credit facility with Silicon Valley Bank, or SVB, with a borrowing capacity of $5.0 million. As of December 31, 2010 and the date of this report, we have borrowed $2.5 million under this facility and have $2.5 million available. The line of credit was scheduled to expire in accordance with its terms on February 17, 2011, but SVB has agreed to extend the maturity until May 18, 2011, after which time we fully expect to either continue this line of credit or have a similar or enhanced agreement in place with SVB.

Borrowings under the line of credit with SVB carry a floating annual interest rate equal to 6% or, if greater, two percentage points above SVB s prime rate then in effect. Amounts due under the facility are secured by substantially all of our assets, including our intellectual property, personal property and bank accounts. Amounts

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due under our January 2010 promissory note to Hansen are subordinated to amounts due to SVB under the line of credit, subject to certain terms and conditions. The line of credit includes a fee of one-half of one percent (0.50%) per annum based on the average unused portion of the facility from time to time.

The SVB facility requires us to observe a number of financial and operational covenants, including maintenance of a specified liquidity ratio, achievement of certain adjusted EBITDA targets, protection and registration of intellectual property rights, and certain customary negative covenants. We may use the proceeds of borrowings for any variety of purposes, including working capital and general corporate purposes. We are in compliance with the required covenants.

The line of credit with SVB contains customary events of default, including nonpayment of principal, interest or other amounts, violation of covenants, material adverse change, an event of default under any subordinated debt documents, incorrectness of representations and warranties in any material respect, bankruptcy, judgments in excess of a threshold amount and violations of other agreements in excess of a threshold. If any event of default occurs, SVB may declare due immediately all borrowings and foreclose on the collateral. Furthermore, an event of default under the line of credit would result in an increase in the interest rate on any amounts outstanding.

We believe that our current cash balance, in addition to the funds available to us under the line of credit with SVB, provide adequate liquidity for us to meet our working capital needs during the remainder of 2011.

Discussion of Cash Flows

During the year ended December 31, 2010, operations used $110,000 of net cash, compared to the years ended December 31, 2009 and 2008, in which we used approximately $4.6 million and $758,000 in operations, respectively. In 2010, our net loss of $2.6 million was offset by $4.8 million of non-cash expenses, while net changes in operating assets and liabilities during the year resulted in a net cash outflow of $2.3 million. Included in these working capital changes was our $9.7 million settlement with Hansen, which was accrued as an expense during 2009 but paid in 2010. During 2009, our operating cash flow was the result of our $20.4 million net loss, offset by the $9.7 million accrued Hansen settlement and $7.9 million of other non-cash expenses, including reorganization costs and intangible asset impairment charges, and a $1.8 million net cash outflow from changes in operating assets and liabilities. During 2008, our net loss of $6.3 million was offset by $4.8 million of non-cash expenses, while net changes in operating assets and liabilities resulted in a net cash inflow of $733,000.

Cash used in investing activities relates to the purchase of property and equipment as well as capitalized costs associated with securing intellectual property rights. During 2009, we also made a small acquisition of intellectual property assets from a third party. Our overall cash used in investing activities was $451,000 in 2010 compared to $696,000 in 2009 and $927,000 in 2008.

Cash provided by financing activities for the year ended December 31, 2010 was $2.5 million compared to cash flows used in financing activities of $5.0 million in 2009. During 2008, we borrowed a term loan in the amount of $5.0 million, which was repaid during 2009. During 2008, we received $169,000 from the exercise of options and warrants and made $11,000 in payments on capital leases. During 2009, we received $51,000 from the exercise of options and warrants and made $10,000 in payments on capital leases. During 2010, we borrowed $2.5 million from our line of credit with Silicon Valley Bank, repaid $834,000 of indebtedness to Hansen, received $889,000 in proceeds from the exercise of options and warrants and paid $5,000 on our capital leases.

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Summary of Contractual Obligations

The following table sets forth information concerning our known contractual obligations as of December 31, 2010 that are fixed and determinable.

	Total	Less than 1 year	1 - 3 years	3 - 5 years	More than 5 years
Long-term debt obligations (1)	$ 3,807,393	$ 1,195,784	$ 2,611,609	$	$
Operating facility leases (2)	4,473,503	1,339,394	2,470,895	663,214	
Other operating leases	54,344	28,140	26,204		
Purchase order obligation (3)	1,368,480	1,216,427	152,053		
City of Danville grant (4)	86,372	21,633	64,739		
Other liabilities (5)	3,128,000	557,000	780,000	609,000	1,182,000
Total	$ 12,918,092	$ 4,358,378	$ 6,105,500	$ 1,272,214	$ 1,182,000

(1) Amounts due under our debt obligations to Hansen are payable in quarterly installments through October 2013.

(2) We lease our facilities in Blacksburg, Charlottesville and Roanoke, Virginia under operating leases that expire between September 2012 and December 2015. Upon expiration of the leases, we may exercise certain renewal options as specified in the leases. We also lease a facility in McLean, Virginia, which is fully subleased.

(3) In August 2010, our Luna Technologies subsidiary executed a non-cancelable $1.8 million purchase order for multiple shipments of tunable lasers to be delivered over an 18-month period beginning in October 2010. As of December 31, 2010 approximately $1.4 million of this commitment remained.

(4) In March 2004, we received a $900,000 grant from the City of Danville, Virginia. One-half of the grant was to be used to offset certain capital expenditures for leasehold improvements being made at our Danville facility, and one-half was to be used for our creation of new jobs. We satisfied the job creation criteria in full and the capital expenditures criteria in part in 2008 and recognized $668,000 of the grant as income for that year. In 2009 and 2010 we satisfied additional criteria and earned another approximately $124,000 of the grant. In January 2010, we agreed to repay the remaining $108,000 of the grant in quarterly installments through November 2014.

(5) Other liabilities include remaining amounts payable for minimum royalty payments for certain licensed technologies payable over the remaining patent terms of the underlying technology.

Off-Balance Sheet Arrangements

We have no off-balance sheet arrangements as defined in Regulation S-K, Item 303(a)(4)(ii).

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Market risk represents the risk of loss that may impact our financial position due to adverse changes in financial market prices and rates. We do not hold or issue financial instruments for trading purposes or have any derivative financial instruments. Our exposure to market risk is limited to interest rate fluctuations due to changes in the general level of United States interest rates.

Interest Rate Risk

We do not use derivative financial instruments as a hedge against interest rate fluctuations, and, as a result, interest income earned on our cash and cash equivalents and short-term investments is subject to changes in interest rates. However, we believe that the impact of these fluctuations does not have a material effect on our financial position due to the immediate available liquidity or short-term nature of these financial instruments.

We are exposed to interest rate fluctuations as a result of our Silicon Valley Bank debt facility having a variable interest rate. However, the loan facility has a minimum fixed interest rate of 6%, which was in effect

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during 2010. We do not currently use derivative instruments to alter the interest rate characteristics of our debt. For the principal amount of $2.5 million outstanding under the line of credit as of December 31, 2010, a change in the interest rate by one percentage point for one year would result in a change in our annual interest expense of approximately $25,000.

Foreign Currency Exchange Rate Risk

As of December 31, 2010, all payments made under our research contracts have been denominated in United States dollars. Our product sales to foreign customers are also denominated in U.S. dollars, and we do not receive payments in foreign currency. As such, we are not directly exposed to currency gains or losses resulting from fluctuations in foreign exchange rates.

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ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

Board of Directors and Shareholders

Luna Innovations Incorporated

We have audited the accompanying consolidated balance sheets of Luna Innovations Incorporated (a Delaware Corporation) and subsidiaries as of December 31, 2010 and 2009, and the related consolidated statements of operations, changes in stockholders equity (deficit), and cash flows for each of the three years in the period ended December 31, 2010. Our audits of the basic financial statements included the financial statement schedule listed in the index appearing under Item 15 (a)(2). These financial statements and financial statement schedule are the responsibility of the Company s management. Our responsibility is to express an opinion on these financial statements and financial statement schedule 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. The Company is not required to have, nor were we engaged to perform an audit of its internal control over financial reporting. Our audit included consideration of internal control over financial reporting as a basis for designing audit procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company s internal control over financial reporting. Accordingly, we express no such opinion. An audit also includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, 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 Luna Innovations Incorporated and subsidiaries as of December 31, 2010 and 2009, and the results of their operations and their cash flows for each of the three years in the period ended December 31, 2010 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

/s/ Grant Thornton LLP

McLean, Virginia

March 31, 2011

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CONSOLIDATED BALANCE SHEETS

	December 31, 2009	December 31, 2010
Assets		
Current assets		
Cash and cash equivalents	$ 5,228,802	$ 7,216,580
Accounts receivable, net	7,203,203	7,669,625
Inventory, net	2,890,364	3,106,600
Prepaid expenses	560,964	665,210
Other current assets	729,532	45,348
Total current assets	16,612,865	18,703,363
Property and equipment, net	4,129,015	3,204,670
Intangible assets, net	580,785	664,418
Other assets	435,259	303,210
Total assets	**$ 21,757,924**	**$ 22,875,661**
Liabilities and stockholders equity (deficit)		
Liabilities not subject to compromise:		
Current Liabilities not subject to compromise;		
Current portion of long term debt obligation		1,195,784
Current portion of capital lease obligation	7,510	2,194
Line of credit		2,500,000
Accounts payable	1,142,267	2,008,183
Accrued liabilities	3,379,339	3,549,604
Deferred credits	1,027,016	1,392,602
Liabilities not subject to compromise	5,556,132	10,648,367
Long-term debt obligation		2,611,609
Liabilities subject to compromise	19,062,000	
Total liabilities	24,618,132	13,259,976
Commitments and contingencies		
Stockholders equity (deficit):		
Preferred stock, par value $0.001, 1,321,514 shares authorized, issued and outstanding at December 31, 2010		1,322
Common stock, par value $0.001, 100,000,000 shares authorized, 11,351,967 and 13,449,345 shares issued and outstanding at December 31, 2009 and 2010, respectively	11,352	13,526
Additional paid-in capital	41,228,698	56,681,756
Accumulated deficit	(44,100,258)	(47,080,919)
Total stockholders (deficit) equity	(2,860,208)	9,615,685
Total liabilities and stockholders equity (deficit)	**$ 21,757,924**	**$ 22,875,661**

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

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CONSOLIDATED STATEMENTS OF OPERATIONS

	Years ended December 31,		
	2008	2009	2010
Revenues:			
Technology development revenues	$ 26,517,969	$ 25,198,038	$ 22,404,931
Product and license revenues	10,380,351	9,373,849	12,133,463
Total revenues	36,898,320	34,571,887	34,538,394
Cost of revenues:			
Technology development costs	17,367,313	17,031,768	15,808,108
Product and license costs	5,490,249	4,783,586	5,786,567
Total cost of revenues	22,857,562	21,815,354	21,594,675
Gross profit	14,040,758	12,756,533	12,943,719
Operating expense:			
Selling, general & administrative	17,688,065	16,345,578	13,297,705
Research, development, and engineering	3,646,590	2,874,666	1,694,643
Litigation settlement		9,669,728	
Impairment of intangible assets		1,310,598	
Total operating expense	21,334,655	30,200,570	14,992,348
Operating loss	(7,293,897)	(17,444,037)	(2,048,629)
Other income (expense):			
Other income, net	1,197,755	735	77,299
Interest (expense), net	(189,501)	(503,699)	(474,408)
Total other income (expense)	1,008,254	(502,964)	(397,109)
Loss before reorganization costs and income tax expense	(6,285,643)	(17,947,001)	(2,445,738)
Reorganization costs		1,897,580	174,292
Loss before income tax expense	(6,285,643)	(19,844,581)	(2,620,030)
Income tax expense		600,000	
Net loss	$ (6,285,643)	$ (20,444,581)	$ (2,620,030)
Preferred stock dividend			360,631
Net loss attributable to common stockholders	$ (6,285,643)	$ (20,444,581)	$ (2,980,661)

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