ILLUMINA INC
Form 10-K
February 28, 2007

Table of Contents

UNITED STATES SECURITIES AND EXCHANGE COMMISSION
Washington, D.C. 20549

Form 10-K

þ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d)**
OF THE SECURITIES EXCHANGE ACT OF 1934
For the fiscal year ended December 31, 2006

or

o **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: 000-30361

Illumina, Inc.
(Exact name of Registrant as Specified in Its Charter)

Delaware	**33-0804655**
(State or other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*
9885 Towne Centre Drive, San Diego, California	**92121**
(Address of Principal Executive Offices)	*(zip code)*

Registrant s telephone number, including area code:
(858) 202-4500

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

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

Common Stock, $0.01 par value
(Title of class)

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

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 o No þ

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 þ No o

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. o

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

Large accelerated filer þ Accelerated filer o Non-accelerated filer o

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

As of February 1, 2007, there were 60,049,268 shares of the Registrant s Common Stock outstanding. The aggregate market value of the Common Stock held by non-affiliates of the Registrant as of June 30, 2006 (the last business day of the Registrant s most recently completed second fiscal quarter), based on the closing price for the Common Stock on the NASDAQ Global Market on that date, was $1,289,642,486. This amount excludes an aggregate of 2,471,651 shares of Common Stock held by officers and directors and each person known by the Registrant to own 10% or more of the outstanding Common Stock. Exclusion of shares held by any person should not be construed to indicate that such person possesses the power, directly or indirectly, to direct or cause the direction of the management or policies of the Registrant, or that the Registrant is controlled by or under common control with such person.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant s definitive proxy statement for the annual meeting of stockholders expected to be held on June 7, 2007 are incorporated by reference into Items 10 through 14 of Part III of this Report.

ILLUMINA, INC.

FORM 10-K
FOR THE FISCAL YEAR ENDED DECEMBER 31, 2006

TABLE OF CONTENTS

Table of Contents

PART I

ITEM 1. *Business.*

This Annual Report on Form 10-K may contain forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, and Section 21E of the Securities Exchange Act of 1934. These statements relate to future events or our future financial performance. We have attempted to identify forward-looking statements by terminology including anticipates, believes, can, continue, could, estimates, expects, intends, may, plans, pot or will or the negative of these terms or other comparable terminology. These statements are only predictions and involve known and unknown risks, uncertainties and other factors, including the risks outlined under Item 1A. Risk Factors in this Annual Report, that may cause our actual results, levels of activity, performance or achievements to be materially different from any future results, levels or activity, performance or achievements expressed or implied by these forward-looking statements. Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee future results, levels of activity, performance or achievements. Accordingly, you should not unduly rely on these forward-looking statements, which speak only as of the date of this Annual Report. We are not under any duty to update any of the forward-looking statements after the date we file this Annual Report on Form 10-K or to conform these statements to actual results, unless required by law. You should, however, review the factors and risks we describe in the reports we file from time to time with the Securities and Exchange Commission.

Illumina®, Array of Arrays™, BeadArray™, BeadXpress™, CSPro™, DASL®, GoldenGate®, Infinium®, IntelliHyb™, iSelect™, Making Sense Out of Life®, Oligator®, Sentrix®, VeraCode™, Solexa®, MPSS™ are our trademarks. This report also contains brand names, trademarks or service marks of companies other than Illumina, and these brand names, trademarks and service marks are the property of their respective holders.

Available Information

Our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and all amendments to those reports are available free of charge on our website, www.illumina.com. The information on our website is not incorporated by reference into this report. Such reports are made available as soon as reasonably practicable after filing with, or furnishing to, the Securities and Exchange Commission. The SEC also maintains an Internet site at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that electronically file with the SEC.

Overview

We are a leading developer, manufacturer and marketer of next-generation life science tools and integrated systems for the large scale analysis of genetic variation and biological function. Using our proprietary technologies, we provide a comprehensive line of products and services that currently serve the sequencing, genotyping and gene expression markets, and we expect to enter the market for molecular diagnostics. Our customers include leading genomic research centers, pharmaceutical companies, academic institutions, clinical research organizations and biotechnology companies. Our tools provide researchers around the world with the performance, throughput, cost effectiveness and flexibility necessary to perform the billions of genetic tests needed to extract valuable medical information from advances in genomics and proteomics. We believe this information will enable researchers to correlate genetic variation and biological function, which will enhance drug discovery and clinical research, allow diseases to be detected earlier and permit better choices of drugs for individual patients.

Table of Contents

On January 26, 2007, we completed the acquisition of Solexa, Inc. (Solexa) for approximately 13.1 million shares of our common stock. Solexa develops and commercializes genetic analysis technologies used to perform a range of analyses, including whole genome resequencing, gene expression analysis and small RNA analysis. We believe our combined company is the only company with genome-scale technology for genotyping, gene expression and sequencing, the three cornerstones of modern genetic analysis.

We were incorporated in California in April 1998. We reincorporated in Delaware in July 2000. Our principal executive offices are located at 9885 Towne Centre Drive, San Diego, California 92121. Our telephone number is (858) 202-4500.

Industry Background

Genetic Variation and Biological Function

Every person inherits two copies of each gene, one from each parent. The two copies of each gene may be identical, or they may be different. These differences are referred to as genetic variation. Examples of the physical consequences of genetic variation include differences in eye and hair color. Genetic variation can also have important medical consequences. Genetic variation affects disease susceptibility, including predisposition to cancer, diabetes, cardiovascular disease and Alzheimer s disease. In addition, genetic variation may cause people to respond differently to the same drug treatment. Some people may respond well, others may not respond at all, and still others may experience adverse side effects. A common form of genetic variation is a single-nucleotide polymorphism, or SNP. A SNP is a variation in a single position in a DNA sequence. It is estimated that the human genome contains over nine million SNPs.

While in some cases a single SNP will be responsible for medically important effects, it is now believed that combinations of SNPs may contribute to the development of most major diseases. Since there are millions of SNPs, it is important to investigate many representative, well-chosen SNPs simultaneously in order to discover medically valuable information.

Another contributor to disease and dysfunction is the over- or under-expression of genes within an organism s cells. A very complex network of genes interacts to maintain health in complex organisms. The challenge for scientists is to delineate the associated genes expression patterns and their relationship to disease. Until recently, this problem was addressed by investigating effects on a gene-by-gene basis. This is time consuming, and difficulties exist when several pathways cannot be observed or controlled at the same time. With the advent of microarray technology, thousands of genes can now be tested at the same time.

SNP Genotyping

SNP genotyping is the process of determining which base (A, C, G or T) is present at a particular site in the genome within an individual or other organism. The use of SNP genotyping to obtain meaningful statistics on the effect of an individual SNP or a collection of SNPs, and to apply that information to clinical trials and diagnostic testing, requires the analysis of millions of SNP genotypes and the testing of large populations for each disease. For example, a single large clinical trial could involve genotyping 300,000 SNPs per patient in 1,000 patients, thus requiring 300 million assays. Using previously available technologies, this scale of SNP genotyping was both impractical and prohibitively expensive.

Large-scale SNP genotyping can be used in a variety of ways, including studies designed to understand the genetic contributions to disease (disease association studies), genomics-based drug development, clinical trial analysis,

disease predisposition testing, and disease diagnosis. SNP genotyping can also be used outside of healthcare, for example in the development of plants and animals with desirable commercial characteristics. These markets will require billions of SNP genotyping assays annually.

Table of Contents

Gene Expression Profiling

Gene expression profiling is the process of determining which genes are active in a specific cell or group of cells and is accomplished by measuring mRNA, the intermediary messenger between genes (DNA) and proteins. Variation in gene expression can cause disease, or act as an important indicator of disease or predisposition to disease. By comparing gene expression patterns between cells from different environments, such as normal tissue compared to diseased tissue or in the presence or absence of a drug, specific genes or groups of genes that play a role in these processes can be identified. Studies of this type, often used in drug discovery, require monitoring thousands, and preferably tens of thousands, of mRNAs in large numbers of samples. Once a smaller set of genes of interest has been identified, researchers can then examine how these genes are expressed or suppressed across numerous samples, for example, within a clinical trial.

As gene expression patterns are correlated to specific diseases, gene expression profiling is becoming an increasingly important diagnostic tool. Diagnostic use of expression profiling tools is anticipated to grow rapidly with the combination of the sequencing of various genomes and the availability of more cost-effective technologies.

Sequencing

DNA sequencing is the process of determining the order of bases (A, C, G or T) in a DNA sample, which can be further divided into de novo sequencing, re-sequencing, and tag sequencing. In de novo sequencing, the goal is to determine the sequence of a representative individual from a species never before sequenced. Understanding the similarities and differences in DNA sequence between many species can help to improve our understanding of the function of the structures found in the DNA.

In re-sequencing, one determines the sequences of many individuals from the same species, generally comparing each to a standard or reference sequence. This is an extremely comprehensive form of genotyping, in which every single base is characterized for possible mutations. Mutations tend to fall in two categories: those which occur fairly frequently at a tiny fraction of bases (e.g. at about 0.1% of bases in humans), and those which occur much less frequently but at a large number of locations. Both types can contribute to diseases. Genotyping can subsequently be used to characterize the former, but re-sequencing is used to assay the latter. With the merger of Illumina and Solexa, we will have state-of-the-art technologies for both.

In tag sequencing, short sequences, each representative of a larger molecule or genomic location, are detected and counted. In these applications, the number of times that each tag is seen provides quantification of an underlying biological process. As an example, in digital gene expression, one tag sequence may exist for each gene, and the number of copies of this tag which are detected in an experiment is a measure of how actively that gene is being expressed in the tissue sample being analyzed.

Table of Contents

Our Technologies

BeadArray Technology

We have developed a proprietary array technology that enables the large-scale analysis of genetic variation and biological function. Our BeadArray technology combines microscopic beads and a substrate in a simple proprietary manufacturing process to produce arrays that can perform many assays simultaneously. Our BeadArray technology provides a unique combination of high throughput, cost effectiveness, and flexibility. We achieve high throughput with a high density of test sites per array and we are able to format arrays either in a pattern arranged to match the wells of standard microtiter plates or in various configurations in the format of standard microscope slides. We seek to maximize cost effectiveness by reducing consumption of expensive reagents and valuable samples, and through the low manufacturing costs associated with our technologies. Our ability to vary the size, shape and format of the well patterns and to create specific bead pools, or sensors, for different applications provides the flexibility to address multiple markets and market segments. We believe that these features have enabled our BeadArray technology to become a leading platform for the emerging high-growth market of SNP genotyping and expect they will enable us to become a key player in the gene expression market.

Our proprietary BeadArray technology combines microwells etched into a substrate and specially prepared beads that self-assemble into an array. We have deployed our BeadArray technology in two different array formats, the Array Matrix and the BeadChip. Our first bead-based product was the Array Matrix which incorporates fiber optic bundles. The fiber optic bundles, which we cut into lengths of less than one inch, are manufactured to our specifications. Each bundle is comprised of approximately 50,000 individual fibers and 96 of these bundles are placed into an aluminum plate, which forms an Array Matrix. BeadChips are fabricated in microscope slide-shaped sizes with varying numbers of sample sites per slide. Both formats are chemically etched to create tens to hundreds of thousands of wells for each sample site.

In a separate process, we create sensors by affixing a specific type of molecule to each of the billions of microscopic beads in a batch. We make different batches of beads, with the beads in a given batch coated with one particular type of molecule. The particular molecules on a bead define that bead s function as a sensor. For example, we create a batch of SNP sensors by attaching a particular DNA sequence, or oligo, to each bead in the batch. We combine batches of coated beads to form a pool specific to the type of array we intend to create. A bead pool one milliliter in volume contains sufficient beads to produce thousands of arrays.

To form an array, a pool of coated beads is brought into contact with the array surface where they are randomly drawn into the wells, one bead per well. The tens of thousands of beads in the wells comprise our individual arrays. Because the beads assemble randomly into the wells, we perform a final procedure called decoding in order to determine which bead type occupies which well in the array. We employ several proprietary methods for decoding, a process that requires only a few steps to identify all the beads in the array. One beneficial by-product of the decoding process is a validation of each bead in the array. This quality control test characterizes the performance of each bead and can identify and eliminate use of any empty wells. We ensure that each bead type on the array is sufficiently represented by including multiple copies of each bead type. Multiple bead type copies improve the reliability and accuracy of the resulting data by allowing statistical processing of the results of identical beads. We believe we are the only microarray company to provide this level of quality control in the industry.

Table of Contents

An experiment is performed by preparing a sample, such as DNA from a patient, and introducing it to the array. The design features of our Array Matrix allow it to be simply dipped into a solution containing the sample, whereas our BeadChip allows processing of samples on a slide-sized platform. The molecules in the sample bind to their matching molecules on the coated bead. These molecules in either the sample or on the bead are labeled with a fluorescent dye either before or after the binding. The BeadArray Reader detects the fluorescent dye by shining a laser on the fiber optic bundle or on the BeadChip. This allows the detection of the molecules resulting in a quantitative analysis of the sample.

VeraCode Technology

The BeadArray technology is most effective in applications which require mid- to high levels of multiplexing from low to high levels of throughput. Multiplexing refers to the number of individual pieces of information that are simultaneously extracted from one sample. We believe the molecular diagnostics market will require systems which are extremely high throughput and cost effective in the mid- to low-multiplex range. To address this market, we acquired the VeraCode technology through our acquisition of CyVera Corporation in April 2005. Based on digitally encoded microbeads, VeraCode enables low-cost multiplexing from 1 to 384-plex in a single well. We plan to implement the VeraCode technology using our newly designed BeadXpress system and our existing assays. We believe that this system will enable lower multiplex genotyping, gene expression and protein based assays. In the research market, we expect our customers to utilize our BeadArray technology for their higher multiplex projects and then move to our BeadXpress system for their lower multiplex projects utilizing the same assays. Additionally, we believe that the cost and multiplex advantages of the BeadXpress system using our VeraCode technology will be welcomed in the molecular diagnostics market. We expect to launch the BeadXpress system during the first quarter of 2007, along with several assays for the system.

Oligator Technology

Genomic applications require many different short pieces of DNA that can be made synthetically, called oligos. We have developed our proprietary Oligator technology for the parallel synthesis of many different oligos to meet the requirements of large-scale genomics applications. We believe that our Oligator technology is substantially more cost effective and provides significantly higher throughput than available commercial alternatives. Our synthesis machines are computer controlled and utilize many robotic processes to minimize the amount of labor used in the manufacturing process. In 2005, we implemented our fourth-generation Oligator technology, which is capable of manufacturing over 13,000 different oligos per run. This is an improvement over prior generations of technology where we could only manufacture approximately 3,000 oligos per run. This increase in scale was necessary to enable us to support the manufacture of oligos under our collaboration with Invitrogen as well as to support our increased internal need for oligos, a critical component of our BeadArray technology, for product sales and new product development.

Table of Contents

Sequencing Technology

Our DNA sequencing technology, acquired as part of the Solexa merger which was completed on January 26, 2007, is based on use of our sequencing-by-synthesis (SBS) biochemistry. In SBS, single stranded DNA is extended from a priming site, one base at a time, using reversible terminator nucleotides. These are DNA bases which can be added to a growing second strand, but which initially cannot be further extended. This means that at each cycle of the chemistry, only one base can be added. Each base which is added includes a fluorescent label which is specific to the particular base. Thus following incorporation, the fluorescence can be imaged, its color determined, and the base itself can be inferred. Once this is done, an additional step removes both the fluorescence and the block that had prevented further extension of the second strand. This allows another base to be added, and the cycle can be repeated. We have shown data in which this cycle is repeated up to 50 times, thus determining DNA sequences which are up to 50 bases long. This may well increase in the future as we further develop this technology. The reversible terminator bases which we use are novel synthetic molecules which we manufacture. They are not well incorporated by naturally occurring polymerases, so we have also developed proprietary enzymes for this purpose. Both the nucleotides and enzymes are the subject of significant intellectual property.

In our DNA sequencing systems, we apply the SBS biochemistry on microscopic islands of DNA. These are called DNA clusters. Each cluster starts as a single DNA molecule, typically a few hundred bases long, attached to the inside surface of a flow cell. We then use a proprietary amplification biochemistry to create copies of each starting molecule. As the copies are made, they are covalently linked to the surface, so they cannot diffuse away. After a number of cycles of amplification, each cluster might have 500 to 1,000 copies of the original starting molecule, but still be only about a micron (one-millionth of a meter) in diameter. By making so many copies, the fluorescent signal from each cluster is significantly increased. Because the clusters are so small though, tens of millions of clusters can be independently formed inside a single flow cell. This large number of clusters can then be sequenced simultaneously, by alternate cycles of SBS biochemistry and electronic imaging.

Key Advantages of Our Technology

We believe that our technology provides distinct advantages, in a variety of applications, over competing technologies, by creating cost-effective, highly miniaturized arrays with the following characteristics:

High Throughput. The miniaturization of our BeadArray technology provides very high information content per unit area. To increase sample throughput, we have formatted our array matrix in a pattern arranged to match the wells of standard microtiter plates, allowing throughput levels of up to nearly 150,000 unique assays per microtiter plate, and we use laboratory robotics to speed process time. Similarly, we have patterned our whole-genome expression BeadChips to support up to 48,000 gene expression assays for six samples with each BeadChip, and our whole-genome genotyping BeadChips to support up to 650,000 genotypes with each BeadChip. Our Infinium and GoldenGate assays are supported by full automation and LIMS to address high throughput laboratories. Our Illumina Genome Analyzer can analyze the DNA sequences of tens of millions of clusters at one time.

Cost Effectiveness. Our array products substantially reduce the cost of our customers experiments as a result of our proprietary manufacturing process and our ability to capitalize on cost reductions generated by advances in fiber optics, plasma etching processes, digital imaging and bead chemistry. In addition, our products require smaller reagent volumes than other array technologies, thereby reducing reagent costs for our customers. Our Oligator technology further reduces reagent costs, as well as reducing our cost of coating beads used in our BeadArray and VeraCode technologies. We expect the Illumina Genome Analyzer to allow DNA sequencing at 1/100th of the cost of conventional capillary instruments.

Table of Contents

Flexibility. We are able to offer flexible solutions to our customers based on our ability to attach different kinds of molecules, including DNA, RNA, proteins and other chemicals, to our beads. In addition, we can have BeadChips manufactured in multiple shapes and sizes with wells organized in various arrangements to optimize them for different markets and market segments. In combination, the use of beads and etched wells provides the flexibility and scalability for our BeadArray technology to be tailored to perform many applications in many different market segments, from drug discovery to diagnostics. Our Oligator technology allows us to manufacture a wide diversity of lengths and quantities of oligos. DNA sequences determined with our Illumina Genome Analyzer can also be used to identify larger DNA or RNA molecules from which the sequences have been derived, which leads to a series of applications based on tag sequencing, including digital gene expression analysis and microRNA discovery and quantification.

Quality and Reproducibility. The quality of our products is dependent upon each element in the system the array, the assay used to perform the experiment and the instrumentation and software used to capture the results. Each array is manufactured with a high density of beads, which enables us to have multiple copies of each individual bead type. We measure the copies simultaneously and combine them into one data point. This allows us to make a comparison of each bead against its own population of identical beads, which permits the statistical calculation of a more reliable and accurate value for each data point. Finally, the manufacture of the array includes a proprietary decoding step that also functions as a quality control test of every bead on every array, improving the overall quality of the data. When we develop the assays used with our products, we focus on performance, cost and ease of use. By developing assays that are easy to use, we can reduce the potential for the introduction of error into the experiment. We believe that this enables researchers to obtain high quality and reproducible data from their experiments. Additionally, we manufacture substantially all of the reagents used in our assays, allowing us to control the quality of the product delivered to the customer.

Our Strategy

Our goal is to make our BeadArray, BeadXpress and Illumina Genome Analyzer platforms the industry standard for products and services addressing the genetic analysis markets. We plan to achieve this by:

- focusing on emerging high-growth markets;
- rapidly commercializing our BeadLab, BeadStation, BeadXpress, Illumina Genome Analyzer, Array Matrix and BeadChip products;
- expanding our technologies into multiple product lines, applications and market segments; and
- strengthening our technological leadership.

Products and Services

The first implementation of our BeadArray technology, the Array Matrix, is a disposable matrix with 96 fiber optic bundles arranged in a pattern that matches the standard 96-well microtiter plate. Each fiber optic bundle performs more than 1,500 unique assays. The BeadChip, introduced in 2003, is fabricated in multiple configurations to support multiple applications and scanning technologies.

We have provided genotyping services using our proprietary BeadArray technology since 2001. In addition, we have developed our first genotyping and gene expression products based on this technology. These products include disposable Array Matrices and BeadChips, GoldenGate and Infinium reagent kits for SNP genotyping, BeadArray

Reader scanning instruments and an evolving portfolio of custom and standard gene expression products.

Table of Contents

SNP Genotyping

In 2001, we introduced the first commercial application of our BeadArray technology by launching our SNP genotyping services product line. Since this launch, we have had peak days in which we operated at over 60 million genotypes per day. To our knowledge, no other genotyping platform can achieve comparable levels of throughput while delivering such high accuracy and low cost.

We designed our first consumable BeadArray product, the Array Matrix, for SNP genotyping. The Array Matrix uses a universal format that allows it to analyze any set of SNPs. We have also developed reagent kits based on GoldenGate assay protocols and the BeadArray Reader, a laser scanner, which is used to read our array products.

Depending on throughput and automation requirements, our customers can select the system configuration to best meet their needs. For production-scale throughput, our BeadLab would be appropriate, and for moderate-scale throughput, our BeadStation would be selected. Our BeadLab includes our BeadArray Reader, combined with LIMS, standard operating procedures and analytical software and fluid handling robotics. This production-scale system was commercialized in late 2002 and when installed, this system can routinely produce millions of genotypes per day.

The BeadStation, a system for performing moderate-scale genotyping designed to match the throughput requirements of individual research groups and core labs, was commercialized in late 2003. The BeadStation includes our BeadArray Reader and genotyping and/or gene expression analysis software. Multiple BeadStations can be configured to achieve different levels of desired throughput and are fully upgradeable to a full BeadLab through various steps that add automation, sample preparation equipment and LIMS capability.

In 2003, we announced the availability of an assay set for genetic linkage analysis. This standard product has been deployed in our genotyping services operation and is also sold to customers who use our SNP genotyping systems. Genetic linkage analysis can help identify chromosomal regions with potential disease associations across a related set of samples.

In 2005, we announced the introduction of the Major Histocompatability Complex (MHC) Panel Set, which allows the interrogation of a difficult-to-assay area of the genome, often associated with autoimmune diseases. In addition, we announced the introduction of Mouse-6 and MouseRef-8 Gene Expression BeadChip allowing the study of the levels of gene expression in mouse model.

In 2005, we commenced shipping the Sentrix Human-1 Genotyping BeadChip for whole-genome genotyping. This BeadChip provides to scientists the ability to interrogate over 100,000 SNPs located in high-value genetic regions of the human genome. Also, in the fourth quarter of 2005, we began shipping the new Sentrix HumanHap300 Genotyping BeadChip to customers around the world. Using the Infinium assay, which enables us to select virtually any SNP in the genome, the HumanHap300 BeadChip allows analysis of more than 317,000 SNPs. We selected the SNPs for inclusion on the chip in collaboration with a consortium of scientists that are leaders in the genotyping field. We believe this product s quality and performance support our expectation that it will become an important discovery tool for researchers seeking to understand the genetic basis of common yet complex diseases.

In 2006, we introduced several new SNP genotyping products, including:

Sentrix HumanHap240S BeadChip. The HumanHap240S BeadChip is a companion to our Sentrix HumanHap300 BeadChip for genome-wide disease association studies that enables researchers to interrogate an additional 240,000 SNPs utilizing our Infinium assay. We began shipment of this product in the first quarter of 2006.

Sentrix HumanHap550 BeadChip. The HumanHap550 BeadChip contains over 550,000 SNPs on a single microarray. We began shipment of this product in the second quarter of 2006.

Table of Contents

Sentrix HumanHap650Y BeadChip. The HumanHap650Y BeadChip contains over 650,000 SNP markers on a single microarray, which we believe provides the most comprehensive genomic coverage and highest data quality of any whole-genome genotyping product currently available. We began shipment of this product in the third quarter of 2006.

Sentrix HumanHap550+ BeadChip. The HumanHap550+ BeadChip allows customers to add up to 120,000 custom SNP markers to supplement the standard content provided on the existing Sentrix HumanHap550 BeadChip, yielding up to 670,000 markers for association studies.

iSelect Infinium genotyping products. The iSelect Infinium genotyping product line is used for focused content applications. Customers can create a custom array of up to 60,000 SNP markers per sample with 12 samples per chip. We began shipment of these products in the third quarter of 2006.

HumanHap300-Duo and the Human Hap300-Duo+ Genotyping BeadChips. The HumanHap300-Duo allows researchers to analyze two samples simultaneously, with over 634,000 total tag SNPs on a single BeadChip. The HumanHap300-Duo+ allows for the addition of 60,000 custom SNP loci to the base product, enabling researchers to enrich that product with SNPs of interest in any genomic region. We began shipment of the HumanHap300-Duo in the fourth quarter of 2006.

RatRef-12 Expression BeadChip. The RatRef-12 Expression BeadChip enables analysis of 12 samples in parallel on a single BeadChip. Content for this BeadChip is derived from the NCBI RefSeq database (Release 16), with over 22,000 rat transcripts represented. We began shipment of this product in the fourth quarter of 2006.

Through an application called Copy Number Polymorphisms, the HumanHap family of BeadChips also provides high-resolution information on amplifications, deletions and loss of heterozygosity throughout the genome, abnormalities common in cancers and congenital diseases. In addition, we announced additional standard panels in the first quarter of 2006, including mouse linkage and cancer panels.

Gene Expression Profiling

With the addition of application specific accessory kits, our production-scale BeadLabs and BeadStations are capable of performing a growing number of applications, including gene expression profiling.

In 2003, we introduced our focused set gene expression products on both the Array Matrix and BeadChip platforms. Our system includes a BeadArray Reader for imaging Array Matrices and BeadChips, a hybridization chamber and software for data extraction. In addition, we have developed standard gene expression products for each of the human, mouse and arabidopsis genomes with an additional panel that focuses on human toxicology.

In 2005, we began shipment of the Human-6 and HumanRef-8 Expression BeadChip products. Both products allow large-scale expression profiling of multiple samples on a single chip and are imaged using our BeadArray Reader. The Human-6 BeadChip is designed to analyze six discrete whole-human-genome samples on one chip, interrogating in each sample approximately 48,000 transcripts from the estimated 30,000 genes in the human genome. The HumanRef-8 BeadChip product analyzes eight samples in parallel against 24,000 transcripts from the roughly 22,000 genes represented in the consensus RefSeq database, a well-characterized whole-genome subset used broadly in genetic analysis. We expect that these gene expression BeadChips will dramatically reduce the cost of whole-genome expression analysis, allowing researchers to expand the scale and reproducibility of large-scale biological experimentation. In 2006, we began shipment of the RatRef-12, which analyzes twelve samples in parallel against

22,226 transcripts from the roughly 21,910 genes represented in the RefSeq database, release 16.

Table of Contents

Scanning Instrumentation

The BeadArray Reader, an instrument we developed, is a key component of both our production-scale BeadLab and our benchtop BeadStation. This scanning equipment uses a laser to read the results of experiments that are captured on our arrays and was designed to be used in all areas of genetic analysis that use our Array Matrices and BeadChips. In the second quarter of 2006, we began shipment of the AutoLoader, which automates BeadChip loading and scanning and increases lab throughput. The Autoloader is designed to support up to two BeadArray Readers simultaneously for unattended operation.

High-Throughput Oligo Synthesis

We have put in place a state-of-the-art oligo manufacturing facility. This facility serves both the commercial needs under our collaboration with Invitrogen and our internal needs. In addition to their use to coat beads, these oligos are components of the reagent kits for our BeadArray products and are used for assay development. We manufacture oligos in a wide range of lengths and in several scales, with the ability to add many types of modifications. We offer a range of quality control options and have implemented a laboratory information management system to control much of the manufacturing process. In 2005, we stopped selling oligos directly into the market and began shipping oligos under our collaboration with Invitrogen.

Our Collaborative Partners

Invitrogen Corporation

In December 2004, we entered into a strategic collaboration with Invitrogen. The goal of the collaboration is to combine our expertise in oligo manufacturing with the sales, marketing and distribution capabilities of Invitrogen. In connection with the collaboration, we have developed the next generation Oligator DNA synthesis technology. This technology includes both plate-and tube-based capabilities. Under the terms of the agreement, Invitrogen paid us an upfront non-refundable collaboration payment of $2.3 million in the first quarter of 2005. Additionally, upon the achievement of a certain milestone, Invitrogen was obligated to make a milestone payment of $1.1 million to us. During 2005, this milestone was achieved and the milestone payment was received. We used these funds to invest in our San Diego facility to enable the development and implementation of fourth-generation Oligator technology and to extend the technology into the larger market for tube-based oligo products. We began manufacturing and shipping the plate-based and certain tube-based oligo products under the collaboration in the third quarter of 2005. In addition, the agreement provides for the transfer of our Oligator technology into two Invitrogen facilities outside North America. Collaboration profit from the sale of collaboration products is divided equally between the two companies.

Table of Contents

deCODE genetics

In May 2006, we executed a Joint Development and Licensing Agreement (the Development Agreement) with deCODE genetics, ehf. (deCODE). Pursuant to the Development Agreement, the parties agreed to collaborate exclusively to develop, validate and commercialize specific diagnostic tests for variants in genes involved in three disease-related pathways: the gene-encoding leukotriene A4 hydrolase, linked to heart attack; the gene-encoding transcription factor 7-like 2 (TCF7L2), linked to type 2 diabetes; and the gene-encoding BARD1, linked to breast cancer. With deCODE, we are developing diagnostic tests based on these variants for use on our BeadXpress system. Under the agreement, we will be responsible for the manufacturing, marketing and selling of the diagnostic products. The companies will share the development costs of these products and split the profits from sales of the diagnostics tests. The Development Agreement may be terminated as to a particular product under development if one party decides to discontinue funding the development of that product, and may be terminated in whole by either party if the other party commits an uncured material breach, files for bankruptcy or becomes insolvent. Under a separate supply agreement, we installed instrumentation at deCODE that will enable deCODE to perform whole genome association studies on up to 100,000 samples using the our Sentrix HumanHap300 BeadChips and associated reagents.

Intellectual Property

We have an extensive patent portfolio, including, as of February 1, 2007, ownership of, or exclusive licenses to, 106 issued U.S. patents and 149 pending U.S. patent applications, including five allowed applications that have not yet issued as patents, some of which derive from a common parent application. This portfolio includes patents acquired as part of the Solexa merger on January 26, 2007. Our issued patents, which are directed at various aspects of our array, assay, oligo synthesis, instrument and chemical detection technologies, expire between 2011 and 2024. We are seeking to extend the patents directed at the full range of our technologies. We have received or filed counterparts for many of these patents and applications in one or more foreign countries.

We also rely upon trade secrets, know-how, copyright and trademark protection, as well as continuing technological innovation and licensing opportunities to develop and maintain our competitive position. Our success will depend in part on our ability to obtain patent protection for our products and processes, to preserve our copyrights and trade secrets, to operate without infringing the proprietary rights of third parties and to acquire licenses related to enabling technology or products.

We are party to various exclusive and non-exclusive license agreements with third parties, which grant us rights to use key aspects of our array and sequencing technologies, assay methods, chemical detection methods, reagent kits and scanning equipment. We have exclusive licenses from Tufts University to patents that are directed at our use of BeadArray technology. These patents were filed by Dr. David Walt, a member of our board of directors, the Chairman of our Scientific Advisory Board and one of our founders. Our exclusive licenses expire with the termination of the underlying patents, which will occur between 2010 and 2020. We also have additional nonexclusive licenses from various third parties for other components of our products. In all cases, the agreements remain in effect over the term of the underlying patents, may be terminated at our request without further obligation and require that we pay customary royalties while the agreement is in effect.

Research and Development

We have made substantial investments in research and development since our inception. We have assembled a team of skilled engineers and scientists who are specialists in biology, chemistry, informatics, instrumentation, optical systems, software, manufacturing and other related areas required to complete the development of our products. Our research and development efforts have focused primarily on the tasks required to optimize our BeadArray and

Oligator technologies and to support commercialization of the products and services derived from these technologies. As of December 31, 2006, we had a total of 144 employees engaged in research and development activities.

Table of Contents

Our research and development expenses for 2006, 2005 and 2004 (inclusive of charges relating to stock-based compensation of $3.9 million, $0.1 million, and $0.3 million, respectively) were $33.4 million, $27.8 million and $21.5 million, respectively. Compared to 2006, we expect research and development expense to increase in absolute dollars and as a percentage of overall revenue during 2007 as we continue to expand our research and product development efforts, including research and development projects associated with our acquisition of Solexa.

Marketing and Distribution

Our current products address the genetic analysis portion of the life sciences market, in particular, experiments involving sequencing, SNP genotyping and gene expression profiling. These experiments may be involved in many areas of biologic research, including basic human disease research, pharmaceutical drug discovery and development, pharmacogenomics, toxicogenomics and agricultural research. Our potential customers include pharmaceutical, biotechnology, agrichemical, diagnostics and consumer products companies, as well as academic or private research centers. The genetic analysis market is relatively new and emerging and its size and speed of development will be ultimately driven by, among other items:

- the ability of the research community to extract medically valuable information from genomics and to apply that knowledge to multiple areas of disease-related research and treatment;
- the availability of sufficiently low cost, high-throughput research tools to enable the large amount of experimentation required to study genetic variation and biological function; and
- the availability of government and private industry funding to perform the research required to extract medically relevant information from genomic analysis.

We market and distribute our products directly to customers in North America, major European markets, Japan and Singapore. In each of these areas, we have dedicated sales, service and application support personnel responsible for expanding and managing their respective customer bases. In smaller markets in the Pacific Rim countries and Europe, we sell our products and provide services to customers through distributors that specialize in life science products. We expect to significantly increase our sales and distribution resources during 2007 and beyond as we launch a number of new products and expand the number of customers that can use our products.

Manufacturing

We manufacture our array platforms, reagent kits, scanning equipment and oligos in-house. Our manufacturing capacity for BeadChips has increased approximately fourfold over the level as of January 1, 2006. We intend to continue to increase capacity as needed to manufacture our products in sufficient quantity to meet our business plan for 2007. We are focused on continuing to enhance the quality and manufacturing yield of our Array Matrices and BeadChips and are exploring ways to continue increasing the level of automation in the manufacturing process. In addition, we have implemented information management systems for many of our manufacturing and services operations to manage all aspects of material and sample use. We adhere to access and safety standards required by federal, state and local health ordinances, such as standards for the use, handling and disposal of hazardous substances.

We intend to add capacity to manufacture Array Matrices and BeadChips throughout 2007. We currently depend upon outside suppliers for materials used in the manufacture of our products. We intend to continue, and may extend, the outsourcing of portions of our manufacturing process to subcontractors where we determine it is in our best commercial interests.

13

Table of Contents

Competition

Although we expect that our BeadArray products and services will provide significant advantages over currently available products and services, we expect to encounter intense competition from other companies that offer products and services for the SNP genotyping, gene expression and sequencing markets. These include companies such as Affymetrix, Agilent, Amersham Biosciences (acquired by GE Corp. and now named GE Healthcare), Applera Corporation, Applied Biosystems, Beckman Coulter, Caliper Technologies, Luminex, Monogram Biosciences, NimbleGen, Perlegen Sciences, Roche Diagnostics in partnership with 454 Life Sciences, Sequenom and Third Wave Technologies. Some of these companies have or will have substantially greater financial, technical, research, and other resources and larger, more established marketing, sales, distribution and service organizations than we do. In addition, they may have greater name recognition than we do in the markets we need to address and in some cases a large installed base of systems. Each of these markets is very competitive and we expect new competitors to emerge and the intensity of competition to increase in the future. In order to effectively compete with these companies, we will need to demonstrate that our products have superior throughput, cost and accuracy advantages over the existing products. Rapid technological development may result in our products or technologies becoming obsolete. Products offered by us could be made obsolete either by less expensive or more effective products based on similar or other technologies. Although we believe that our technology and products will offer advantages that will enable us to compete effectively with these companies, we cannot assure you that we will be successful.

Segment and Geographic Information

We operate in one business segment, for the development, manufacture and commercialization of tools for genetic analysis. Our operations are treated as one segment as we only report operating results on an aggregate basis to our chief operating decision maker, our Chief Executive Officer.

During 2006, $81.5 million, or 44%, of our total revenue came from shipments to customers outside the United States, compared to $28.0 million, or 38%, in 2005. Sales to territories outside of the United States are generally denominated in U.S. dollars. We expect that sales to international customers will continue to be an important and growing source of revenue. We have sales support resources in Western Europe and direct sales offices in Japan, Singapore and China. In addition, we have distributor relationships in various countries in the Pacific Rim region and Europe.

Seasonality

Historically, customer purchasing patterns have not shown significant seasonal variation, although demand for our products is usually lowest in the first quarter of the calendar year and highest in the third quarter of the calendar year as academic customers spend unused budget allocations before the end of the government s fiscal year.

Environmental Matters

We are dedicated to the protection of our employees and the environment. Our operations require the use of hazardous materials which subject us to a variety of federal, state and local environmental and safety laws and regulations. We believe we are in material compliance with current applicable laws and regulations; however, we could be held liable for damages and fines should contamination of the environment or individual exposures to hazardous substances occur. In addition, we cannot predict how changes in these laws and regulations, or the development of new laws and regulations, will affect our business operations or the cost of compliance.

Employees

As of December 31, 2006, we had a total of 596 employees, 73 of whom hold Ph.D. degrees. 43 of our employees with Ph.D. degrees are engaged in full-time research and development activities. None of our employees are represented by a labor union. We consider our employee relations to be positive.

Table of Contents

Executive Officers

Our executive officers as of February 1, 2007, are as follows:

Name	Age	Position
Jay T. Flatley	54	President, Chief Executive Officer and Director
Christian O. Henry	38	Senior Vice President and Chief Financial Officer
Christian G. Cabou	58	Senior Vice President, General Counsel and Secretary
Arthur L. Holden	54	Senior Vice President of Corporate and Market Development
Tristan B. Orpin	40	Senior Vice President of Commercial Operations
John R. Stuelpnagel, DVM	49	Co-Founder, Senior Vice President and General Manager, Microarray Business, Chief Operating Officer and Director
John West	50	Senior Vice President and General Manager of DNA Sequencing

Jay Flatley is President and Chief Executive Officer of Illumina. Prior to his appointment in 1999, Mr. Flatley was the President and Chief Executive Officer of Molecular Dynamics, later acquired by Amersham Pharmacia Biotech in 1998 and now a part of GE Healthcare. Mr. Flatley, who was a founder and member of the board of directors for Molecular Dynamics, lead the company to its initial public offering (IPO) in 1993, in addition to helping the company develop and launch over 15 major instrumentation systems, including the world s first capillary-based DNA sequencer. Prior to joining Molecular Dynamics, Mr. Flatley was Vice President of Engineering and Strategic Planning for Plexus Computers, a manufacturer of high-performance Unix super-microcomputers. Before his career at Plexus, Mr. Flatley was Executive Vice President for Manning Technologies and held various manufacturing positions while working for the Autolab division of Spectra Physics. Mr. Flatley received a bachelor of arts degree in economics from Claremont McKenna College (Claremont, CA) and a bachelor of science and master of science (summa cum laude) in industrial engineering from Stanford University (Stanford, CA). Currently, he serves as a member of the board of directors of both Illumina and GenVault Corporation.

Christian Henry is Senior Vice President and Chief Financial Officer of Illumina. Mr. Henry joined Illumina in June 2005 and is responsible for worldwide financial operations, controllership functions and facilities management. Mr. Henry served previously as the Chief Financial Officer for Tickets.com, a publicly traded, online ticket provider that was recently acquired by Major League Baseball Advanced Media, LP. Prior to that, Mr. Henry was Vice President, Finance and Corporate Controller of Affymetrix, Inc., a publicly traded life sciences company, where he oversaw accounting, planning, SEC and management reporting, and treasury and risk management. He previously held a similar position at Nektar Therapeutics (formerly Inhale Therapeutic Systems, Inc.). Mr. Henry received a bachelor of administration degree in biochemistry and cell biology from the University of California, San Diego, and a master of business administration degree from the University of California, Irvine. He is a certified public accountant.

Table of Contents

Christian Cabou is Senior Vice President, General Counsel and Secretary of Illumina. Mr. Cabou joined Illumina in May 2006 and has worldwide responsibility for all legal and intellectual property matters, in addition to being responsible for the Company s human resources function. Mr. Cabou is also Illumina s Code of Ethics Compliance Officer. Before joining Illumina, Mr. Cabou spent five years as General Counsel for GE Global Research and, before that, was Senior Counsel of Global Intellectual Property for GE Medical Systems. Prior to his position at GE, Mr. Cabou spent seven years with the law firm Foley & Lardner where he was a partner. He had twenty years of experience in engineering design and management prior to his career in law and intellectual property. Mr. Cabou received a J.D. from Northwestern University s School of Law (Chicago, IL.) in addition to a master of engineering management degree from Northwestern University. Mr. Cabou was awarded a MSEE (equivalent) degree from the Conservatoire National des Arts et Métiers (Paris, France) and a bachelor of science (equivalent) degree from the Lycée Technique d Etat (Armentières, France).

Arthur Holden is the Senior Vice President of Corporate and Business Development for Illumina. Mr. Holden joined Illumina in April 2006 and is responsible for leading business development and the development of relationships and partnerships with pharmaceutical firms, large-scale research consortia, and governmental bodies such as the National Institute of Health (NIH) and the Food and Drug Administration (FDA). Mr. Holden was most recently the principal founder, chairman and chief executive officer for First Genetic Trust. Prior to this he was Chairman and Chief Executive Officer of the SNP Consortium, Ltd. and Chief Executive Officer and Director of Celsis International, PLC. From 1983 to 1994 Mr. Holden held various executive positions at Baxter International. A winner of multiple awards, including the Laura Jackson Achievement Award for outstanding leadership in the healthcare industry, the Illinois Technology Innovation & Entrepreneurship award and the STRIVE Entrepreneurial award, Mr. Holden currently serves on a number of commercial and non-profit boards. He is chairman of the Pharmaceutical Biomedical Research and the Serious Adverse Event Consortia. In addition, he is Chairman of the Advisory Board for the Biotechnology Management Program at the J.L. Kellogg Graduate School of Management. He is a director of iBIO and the Illinois Technology Development Alliance. Mr. Holden earned a master of business administration degree from Northwestern University s Kellogg School of Management (Chicago, IL) and a bachelor of science degree from Union College (Schenectady, NY).

Tristan Orpin joined Illumina in December of 2002 in the role of Vice President of Worldwide Sales, and in January of 2007 was promoted to the position of Senior Vice President of Commercial Operations. Before joining Illumina, Mr. Orpin was Director of Sales and Marketing for Sequenom from September 1999 to August 2001. Later Mr. Orpin was elected Vice President of Sales and Marketing and held this position from August 2001 to November 2002. Prior to 2001, Mr. Orpin served in several senior sales and marketing positions at Bio-Rad Laboratories. Mr. Orpin received a bachelor of science in genetics and biochemistry with first class honors from the University of Melbourne (Melbourne, Australia).

John Stuelpnagel, D.V.M., one of Illumina s co-founders, is General Manager for Illumina s Microarray business and Chief Operating Officer. He has served as the Company s Chief Operating Officer since January 2005 and a Director since April 1998. From April 1998 to October 1999, he served as acting President and Chief Executive Officer and from April 1998 to April 2000 as acting Chief Financial Officer. Between October 1999 and January 2005, Dr. Stuelpnagel was Vice President of Business Development and later as Senior Vice President of Operations. While founding Illumina, Dr. Stuelpnagel was an associate with CW Group, a venture capital firm. Dr. Stuelpnagel received both a bachelor of science degree in biochemistry and a doctorate degree in veterinary medicine from the University of California (Davis, CA), and went on to receive a master of business administration degree from the University of California, Los Angeles.

Table of Contents

John West is Senior Vice President and General Manager for Illumina s DNA Sequencing business. Mr. West joined Illumina from Solexa, where he was Chief Executive Officer. Before Solexa, he was Vice President of DNA Platforms for Applied Biosystems, Inc. (AB) and was responsible for the company s instrument and reagent products for DNA sequencing, gene expression, genotyping, PCR, and DNA synthesis. His group developed and launched the instruments that now populate virtually all genome sequencing centers worldwide. He also had business responsibility for AB s first gene expression array system, for its real-time PCR instruments, and for its microfluidic PCR products. Previously, Mr. West held a number of senior positions, including President of Princeton Instruments, Inc., President and Founder of BioAutomation, Inc. and Marketing Director for Microfluidics at Microcosm Technologies, Inc. During Mr. West s term at Princeton Instruments, the company introduced the first low light imaging system for single molecule fluorescence and Solexa, at that time a startup, bought one of the first units. Mr. West received both bachelor of science and master of science degrees in engineering from MIT, and a master of business administration in finance from the Wharton School of Business at the University of Pennsylvania.

ITEM 1A. ***Risk Factors.***

Our business is subject to various risks, including those described below. In addition to the other information included in this Form 10-K, the following issues could adversely affect our operating results or our stock price.

Litigation or other proceedings or third party claims of intellectual property infringement could require us to spend significant time and money and could prevent us from selling our products or services or impact our stock price.

Our commercial success depends in part on our non-infringement of the patents or proprietary rights of third parties and on our ability to protect our own intellectual property. As we have previously disclosed, Affymetrix, Inc. filed a complaint against us in July 2004, alleging infringement of six of its patents.

On June 30, 2006, the court dismissed a patent Affymetrix had sought to withdraw from its suit leaving five patents being asserted against us. On August 16, 2006, the court issued a ruling on the claim construction hearing that it had held on April 20, 2006 as part of this litigation. We believe the court s mixed ruling interpreted certain claim terms in our favor, and did not adversely impact our defenses and counterclaims which are still pending. At the request of both parties, trial has been rescheduled to March 5, 2007 from October 16, 2006. A pre-trial conference was held on February 8, 2007 during which the court established a multi-phase trial structure with the first phase of the trial to begin on March 5, 2007, and addressed related issues. Any adverse ruling or perception of an adverse ruling throughout these proceedings may have an adverse impact on our stock price, and such impact may be disproportionate to the actual import of the ruling itself.

Table of Contents

Third parties, including Affymetrix, have asserted or may assert that we are employing their proprietary technology without authorization. As we enter new markets, we expect that competitors will likely assert that our products infringe their intellectual property rights as part of a business strategy to impede our successful entry into those markets. In addition, third parties may have obtained and may in the future obtain patents allowing them to claim that the use of our technologies infringes these patents. We could incur substantial costs and divert the attention of our management and technical personnel in defending ourselves against any of these claims. Furthermore, parties making claims against us may be able to obtain injunctive or other relief, which effectively could block our ability to develop further, commercialize and sell products, and could result in the award of substantial damages against us. In the event of a successful claim of infringement against us, we may be required to pay damages and obtain one or more licenses from third parties, or be prohibited from selling certain products. We may not be able to obtain these licenses at a reasonable cost, if at all. We could therefore incur substantial costs related to royalty payments for licenses obtained from third parties, which could negatively affect our gross margins. In addition, we could encounter delays in product introductions while we attempt to develop alternative methods or products. Defense of any lawsuit or failure to obtain any of these licenses on favorable terms could prevent us from commercializing products, and the prohibition of sale of any of our products could materially affect our ability to grow and maintain profitability.

We expect intense competition in our target markets, which could render our products obsolete, result in significant price reductions or substantially limit the volume of products that we sell. This would limit our ability to compete and maintain profitability. If we cannot continuously develop and commercialize new products, our revenue may not grow as intended.

We compete with life sciences companies that design, manufacture and market instruments for analysis of genetic variation and biological function and other applications using technologies such as two-dimensional electrophoresis, capillary electrophoresis, mass spectrometry, flow cytometry, microfluidics, nanotechnology, next-generation DNA sequencing and mechanically deposited, inkjet and photolithographic arrays. We anticipate that we will face increased competition in the future as existing companies develop new or improved products and as new companies enter the market with new technologies. The markets for our products are characterized by rapidly changing technology, evolving industry standards, changes in customer needs, emerging competition, new product introductions and strong price competition. For example, prices per data point for genotyping have fallen significantly over the last two years and we anticipate that prices will continue to fall. One or more of our competitors may render our technology obsolete or uneconomical. Some of our competitors have greater financial and personnel resources, broader product lines, a more established customer base and more experience in research and development than we do. Furthermore, life sciences and pharmaceutical companies, which are our potential customers and strategic partners, could develop competing products. If we are unable to develop enhancements to our technology and rapidly deploy new product offerings, our business, financial condition and results of operations will suffer.

Any inability to adequately protect our proprietary technologies could harm our competitive position.

Our success will depend in part on our ability to obtain patents and maintain adequate protection of our intellectual property in the United States and other countries. If we do not protect our intellectual property adequately, competitors may be able to use our technologies and thereby erode our competitive advantage. The laws of some foreign countries do not protect proprietary rights to the same extent as the laws of the United States, and many companies have encountered significant challenges in protecting their proprietary rights abroad. These challenges can be caused by the absence of rules and methods for the establishment and enforcement of intellectual property rights abroad.

Table of Contents

The patent positions of companies developing tools for the life sciences and pharmaceutical industries, including our patent position, generally are uncertain and involve complex legal and factual questions. We will be able to protect our proprietary rights from unauthorized use by third parties only to the extent that our proprietary technologies are covered by valid and enforceable patents or are effectively maintained as trade secrets. We intend to apply for patents covering our technologies and products, as we deem appropriate. However, our patent applications may be challenged and may not result in issued patents or may be invalidated or narrowed in scope after they are issued. Questions as to inventorship may also arise. For example, in June 2005, a former employee filed a complaint against us, claiming he is entitled to be named as joint inventor of certain of our U.S. patents and pending U.S. and foreign patent applications, and seeking a judgment that the related patents and applications are unenforceable. Any finding that our patents and applications are unenforceable could harm our ability to prevent others from practicing the related technology, and a finding that others have inventorship rights to our patents and applications could require us to obtain certain rights to practice related technologies, which may not be available on favorable terms, if at all.

In addition, our existing patents and any future patents we obtain may not be sufficiently broad to prevent others from practicing our technologies or from developing competing products. There also is risk that others may independently develop similar or alternative technologies or design around our patented technologies. Also, our patents may fail to provide us with any competitive advantage. We may need to initiate additional lawsuits to protect or enforce our patents, or litigate against third party claims, which would be expensive and, if we lose, may cause us to lose some of our intellectual property rights and reduce our ability to compete in the marketplace. Furthermore, these lawsuits may divert the attention of our management and technical personnel.

We also rely upon trade secret protection for our confidential and proprietary information. We have taken security measures to protect our confidential information. These measures, however, may not provide adequate protection for our trade secrets or other confidential information. Among other things, we seek to protect our trade secrets and confidential information by entering into confidentiality agreements with employees, collaborators and consultants. Nevertheless, employees, collaborators or consultants may still disclose our confidential information, and we may not otherwise be able to effectively protect our trade secrets. Accordingly, others may gain access to our confidential information, or may independently develop substantially equivalent information or techniques.

If we are unable to develop and maintain operation of our manufacturing capability, we may not be able to launch or support our products in a timely manner, or at all.

We currently possess limited facilities capable of manufacturing our principle products and services for both sale to our customers and internal use. If a natural disaster were to significantly damage our facility or if other events were to cause our operations to fail, these events could prevent us from developing and manufacturing our products and services. Also, many of our manufacturing processes are automated and are controlled by our custom-designed Laboratory Information Management System (LIMS). Additionally, as part of the decoding step in our array manufacturing process, we record several images of each array to identify what bead is in each location on the array and to validate each bead in the array. This requires significant network and storage infrastructure. If either our LIMS system or our networks or storage infrastructure were to fail for an extended period of time, it would adversely impact our ability to manufacture our products on a timely basis and may prevent us from achieving our expected shipments in any given period.

Table of Contents

Our manufacturing capacity may limit our ability to sell our products.

We continue to ramp up our capacity to meet our anticipated demand for our products. Although we have significantly increased our manufacturing capacity and we believe that we have sufficient plans in place to ensure we have adequate capacity to meet our business plan in 2007 and 2008, there are uncertainties inherent in expanding our manufacturing capabilities and we may not be able to increase our capacity in a timely manner. For example, manufacturing and product quality issues may arise as we increase production rates at our manufacturing facility and launch new products. As a result, we may experience difficulties in meeting customer, collaborator and internal demand, in which case we could lose customers or be required to delay new product introductions, and demand for our products could decline. Additionally, in the past, we have experienced variations in manufacturing conditions that have temporarily reduced production yields. Due to the intricate nature of manufacturing products that contain DNA, we may encounter similar or previously unknown manufacturing difficulties in the future that could significantly reduce production yields, impact our ability to launch or sell these products, or to produce them economically, prevent us from achieving expected performance levels or cause us to set prices that hinder wide adoption by customers.

If we are unable to find third-party manufacturers to manufacture components of our products, we may not be able to launch or support our products in a timely manner, or at all.

The nature of our products requires customized components that currently are available from a limited number of sources. For example, we currently obtain the fiber optic bundles and BeadChip slides included in our products from single vendors. If we are unable to secure a sufficient supply of those or other product components, we will be unable to meet demand for our products. We may need to enter into contractual relationships with manufacturers for commercial-scale production of some of our products, or develop these capabilities internally, and we cannot assure you that we will be able to do this on a timely basis, for sufficient quantities or on commercially reasonable terms. Accordingly, we may not be able to establish or maintain reliable, high-volume manufacturing at commercially reasonable costs.

We may encounter difficulties in integrating acquisitions that could adversely affect our business.

We acquired Solexa in January 2007 and CyVera Corporation in April 2005 and we may in the future acquire technology, products or businesses related to our current or future business. We have limited experience in acquisition activities and may have to devote substantial time and resources in order to complete acquisitions. Further, these potential acquisitions entail risks, uncertainties and potential disruptions to our business. For example, we may not be able to successfully integrate a company s operations, technologies, products and services, information systems and personnel into our business. An acquisition may further strain our existing financial and managerial resources, and divert management s attention away from our other business concerns. In connection with these acquisitions, we assumed certain liabilities and hired certain employees, which is expected to continue to result in an increase in our research and development expenses and capital expenditures. There may also be unanticipated costs and liabilities associated with an acquisition that could adversely affect our operating results. To finance any acquisitions, we may choose to issue shares of our common stock as consideration, which would result in dilution to our stockholders. Additionally, an acquisition may have a substantial negative impact on near-term expected financial results.

The success of the Solexa merger will depend, in part, on our ability to realize the anticipated synergies, growth opportunities and cost savings from integrating Solexa s businesses with our businesses. Our success in realizing these benefits and the timing of this realization depend upon the successful integration of the operations of Solexa. The integration of two independent companies is a complex, costly and time-consuming process. The difficulties of combining the operations of the companies include, among other factors:

lost sales and customers as a result of certain customers of either of the two companies deciding not to do business with the combined company;

Table of Contents

complexities associated with managing the combined businesses;

integrating personnel from diverse corporate cultures while maintaining focus on providing consistent, high quality products and customer service;

coordinating geographically separated organizations, systems and facilities;

potential unknown liabilities and unforeseen increased expenses or delays associated with the merger; and

performance shortfalls at one or both of the companies as a result of the diversion of management s attention to the merger.

If we are unable to successfully combine the businesses in a manner that permits the combined company to achieve the cost savings and operating synergies anticipated to result from the merger, such anticipated benefits of the merger may not be realized fully or at all or may take longer to realize than expected. In addition, we and Solexa have operated and will continue to operate independently. It is possible that the integration process could result in the loss of key employees, diversion of each company s management s attention, the disruption or interruption of, or the loss of momentum in, each company s ongoing businesses or inconsistencies in standards, controls, procedures and policies, any of which could adversely affect our ability to maintain relationships with customers and employees or our ability to achieve the anticipated benefits of the merger, or could reduce our earnings or otherwise adversely affect the business and financial results of the combined company.

The combined company may fail to realize the anticipated benefits of the merger as a result of our failure to achieve anticipated revenue growth following the merger.

Solexa s business faces significant risks. These risks include the fact that Solexa s technology is at the development stage and, although Solexa has accepted orders for its Genome Analyzer and has shipped and installed those systems, Solexa has not completed performance specifications for those systems and has not invoiced customers for them. There can be no assurance it will be able to do so. These risks also include those described under the caption Risk Factors of Solexa s Quarterly Report on Form 10-Q filed with the Securities and Exchange Commission for the quarterly period ended September 30, 2006, and may include additional risks of which we are not currently aware or which we currently do not believe are material. If any of the events or circumstances underlying these risks actually occur, Solexa s business, financial condition or results of operations could be harmed and, as a result, Solexa may, among other things, fail to achieve the anticipated revenue growth following the merger.

The merger will cause dilution of Illumina s earnings per share.

The merger and the transactions contemplated by the merger agreement are expected to have a dilutive effect on our earnings per share at least through 2007 due to losses of Solexa, the additional shares of Illumina common stock that were issued in the merger, the transaction and integration-related costs and other factors such as the potential failure to realize any benefit from synergies anticipated in the merger. These factors could adversely affect the market price of our common stock.

Table of Contents

Solexa had a material weakness in its internal controls over financial reporting as of December 31, 2005. If additional material weaknesses are identified in the future, current and potential stockholders could lose confidence in our consolidated financial reporting, which could harm our business and the trading of our common stock.

As of December 31, 2005, Solexa did not maintain effective control over the application of GAAP related to the financial reporting process. This control deficiency resulted in numerous adjustments being required to bring Solexa s financial statements into compliance with GAAP. Additionally, this deficiency could have resulted in material misstatement of the annual or interim consolidated financial statements that would not be prevented or detected. Accordingly, Solexa s management determined that this control deficiency constituted a material weakness. Because of this material weakness, Solexa s management concluded that, as of December 31, 2005, it did not maintain effective internal control over financial reporting based on those criteria. Should we, or our independent registered public accounting firm, determine in future fiscal periods that there are material weaknesses in our consolidated internal controls over financial reporting (including Solexa), the reliability of our financial reports may be impacted, and our results of operations or financial condition may be harmed and the price of our common stock may decline.

We expect that our results of operations will fluctuate. This fluctuation could cause our stock price to decline.

Our revenue is subject to fluctuations due to the timing of sales of high-value products and services projects, the impact of seasonal spending patterns, the timing and size of research projects our customers perform, changes in overall spending levels in the life sciences industry, and other unpredictable factors that may affect customer ordering patterns. Given the difficulty in predicting the timing and magnitude of sales for our products and services, we may experience quarter-to-quarter fluctuations in revenue resulting in the potential for a sequential decline in quarterly revenue. A large portion of our expenses are relatively fixed, including expenses for facilities, equipment and personnel. In addition, we expect operating expenses to continue to increase significantly. Accordingly, if revenue does not grow as anticipated, we may not be able to maintain annual profitability. Any significant delays in the commercial launch of our products, unfavorable sales trends in our existing product lines, or impacts from the other factors mentioned above, could adversely affect our future revenue growth or cause a sequential decline in quarterly revenue. Due to the possibility of fluctuations in our revenue and expenses, we believe that quarterly comparisons of our operating results are not a good indication of our future performance. If our operating results fluctuate or do not meet the expectations of stock market analysts and investors, our stock price could decline.

We have a limited history of commercial sales of systems and consumable products, and our success depends on our ability to develop commercially successful products and on market acceptance of our new and relatively unproven technologies.

We may not possess all of the resources, capability and intellectual property necessary to develop and commercialize all the products or services that may result from our technologies. Sales of our genotyping and gene expression systems only began in 2003, and some of our other technologies are in the early stages of commercialization or are still in development. You should evaluate us in light of the uncertainties and complexities affecting similarly situated companies developing tools for the life sciences and pharmaceutical industries. We must conduct a substantial amount of additional research and development before some of our products will be ready for sale, and we currently have fewer resources available for research and development activities than some of our competitors. We may not be able to develop or launch new products in a timely manner, or at all, or they may not meet customer requirements or be of sufficient quality or at a price that enables us to compete effectively in the marketplace. Problems frequently encountered in connection with the development or early commercialization of products and services using new and relatively unproven technologies might limit our ability to develop and successfully commercialize these products and services. In addition, we may need to enter into agreements to obtain intellectual property necessary to commercialize

some of our products or services, which may not be available on favorable terms, or at all.

Table of Contents

Historically, life sciences and pharmaceutical companies have analyzed genetic variation and biological function using a variety of technologies. In order to be successful, our products must meet the commercial requirements of the life sciences and pharmaceutical industries as tools for the large-scale analysis of genetic variation and biological function.

Market acceptance will depend on many factors, including:

- our ability to demonstrate to potential customers the benefits and cost effectiveness of our products and services relative to others available in the market;
- the extent and effectiveness of our efforts to market, sell and distribute our products;
- our ability to manufacture products in sufficient quantities with acceptable quality and reliability and at an acceptable cost;
- the willingness and ability of customers to adopt new technologies requiring capital investments; and
- the extended time lag and sales expenses involved between the time a potential customer is contacted on a possible sale of our products and services and the time the sale is consummated or rejected by the customer.

Our sales, marketing and technical support organization may limit our ability to sell our products.

We currently have fewer resources available for sales and marketing and technical support services compared to some of our primary competitors. In order to effectively commercialize our sequencing, genotyping and gene expression systems and other products to follow, we will need to expand our sales, marketing and technical support staff both domestically and internationally. We may not be successful in establishing or maintaining either a direct sales force or distribution arrangements to market our products and services. In addition, we compete primarily with much larger companies that have larger sales and distribution staffs and a significant installed base of products in place, and the efforts from a limited sales and marketing force may not be sufficient to build the market acceptance of our products required to support continued growth of our business.

We have only recently achieved annual operating profitability.

Prior to 2006, we had incurred net losses each year since our inception. As of December 31, 2006, our accumulated deficit was $104.6 million. Our ability to sustain annual profitability will depend, in part, on the rate of growth, if any, of our revenue and on the level of our expenses. SFAS No. 123R is also likely to adversely affect our future profitability. We expect to continue incurring significant expenses related to research and development, sales and marketing efforts to commercialize our products and the continued development of our manufacturing capabilities. In addition, we expect that our research and development and selling and marketing expenses will increase at a higher rate in the future as a result of the development and launch of new products. Even if we maintain profitability, we may not be able to increase profitability on a quarterly basis.

We may encounter difficulties in managing our growth. These difficulties could impair our profitability.

We have experienced, and we may expect to continue to experience rapid and substantial growth in order to achieve our operating plans, which will place a strain on our human and capital resources. If we are unable to manage this growth effectively, our profitability could suffer. Our ability to manage our operations and growth effectively requires us to continue to expend funds to enhance our operational, financial and management controls, reporting systems and

procedures and to attract and retain sufficient numbers of talented employees. If we are unable to scale up and implement improvements to our manufacturing process and control systems in an efficient or timely manner, or if we encounter deficiencies in existing systems and controls, then we will not be able to make available the products required to successfully commercialize our technology. Failure to attract and retain sufficient numbers of talented employees will further strain our human resources and could impede our growth.

Table of Contents

Our effective tax rate may vary significantly.

Our future effective tax rates could be adversely affected by various internal and external factors. These factors, include but are not limited to, earnings being lower than anticipated in countries where we have lower statutory rates and higher than anticipated in countries where we have higher statutory rates; changes in the valuation of our deferred tax assets and liabilities; or changes in tax laws or interpretations thereof; changes in tax rates, future levels of research and development spending, and changes in overall levels of pretax earnings. Any new interpretative guidance relating to accounting for uncertain tax positions could adversely affect our tax provision.

If we lose our key personnel or are unable to attract and retain additional personnel, we may be unable to achieve our goals.

We are highly dependent on our management and scientific personnel, including Jay Flatley, our president and chief executive officer, John Stuelpnagel, our senior vice president and chief operating officer and John West, our senior vice president and general manager of DNA sequencing . The loss of their services could adversely impact our ability to achieve our business objectives. We will need to hire additional qualified personnel with expertise in molecular biology, chemistry, biological information processing, sales, marketing and technical support. We compete for qualified management and scientific personnel with other life science companies, universities and research institutions, particularly those focusing on genomics. Competition for these individuals, particularly in the San Diego area, is intense, and the turnover rate can be high. Failure to attract and retain management and scientific personnel would prevent us from pursuing collaborations or developing our products or technologies.

Our planned activities will require additional expertise in specific industries and areas applicable to the products developed through our technologies, including the life sciences and healthcare industries. Thus, we will need to add new personnel, including management, and develop the expertise of existing management. The failure to do so could impair the growth of our business.

A significant portion of our sales are to international customers.

Approximately 44% and 38% of our revenue for the years ended December 31, 2006 and January 1, 2006, respectively, was derived from shipments to customers outside the United States. We intend to continue to expand our international presence and export sales to international customers and we expect the total amount of non-U.S. sales to continue to grow. Export sales entail a variety of risks, including:

- currency exchange fluctuations;
- unexpected changes in legislative or regulatory requirements of foreign countries into which we import our products;
- difficulties in obtaining export licenses or in overcoming other trade barriers and restrictions resulting in delivery delays; and
- significant taxes or other burdens of complying with a variety of foreign laws.

In addition, sales to international customers typically result in longer payment cycles and greater difficulty in accounts receivable collection. We are also subject to general geopolitical risks, such as political, social and economic instability and changes in diplomatic and trade relations. One or more of these factors could have a material adverse effect on our business, financial condition and operating results.

24

Table of Contents

Our success depends upon the continued emergence and growth of markets for analysis of genetic variation and biological function.

We design our products primarily for applications in the life sciences and pharmaceutical industries. The usefulness of our technology depends in part upon the availability of genetic data and its usefulness in identifying or treating disease. We are initially focusing on markets for analysis of genetic variation and biological function, namely SNP genotyping and gene expression profiling. Both of these markets are new and emerging, and they may not develop as quickly as we anticipate, or reach their full potential. Other methods of analysis of genetic variation and biological function may emerge and displace the methods we are developing. Also, researchers may not seek or be able to convert raw genetic data into medically valuable information through the analysis of genetic variation and biological function. In addition, factors affecting research and development spending generally, such as changes in the regulatory environment affecting life sciences and pharmaceutical companies, and changes in government programs that provide funding to companies and research institutions, could harm our business. If useful genetic data is not available or if our target markets do not develop in a timely manner, demand for our products may grow at a slower rate than we expect, and we may not be able to achieve or sustain annual profitability.

Item 1B. ***Unresolved Staff Comments.***

None.

Item 2. ***Properties.***

The following chart indicates the facilities that we lease, the location and size of each such facility and their designated use. We anticipate needing to expand our facilities over the next several years as we continue to expand our worldwide commercial operations and our manufacturing capabilities.

Location	Approximate Square Feet	Operation	Lease Expiration
San Diego, CA	116,000 sq. ft.	R&D, Manufacturing, Administrative	2023
	17,300 sq. ft.	Administrative	2009
	9,000 sq. ft.	Storage and Distribution	2011
Wallingford, CT	14,500 sq. ft.	R&D	2008
Netherlands	4,100 sq. ft.	Administrative and Distribution	2011
Tokyo, Japan	3,300 sq. ft.	Administrative	2009
Singapore	1,600 sq. ft.	Administrative	2009
Beijing, China	200 sq. ft.	Administrative	2007

As part of our acquisition of Solexa on January 26, 2007, we assumed a non-cancelable operating lease for facilities space of approximately 147,000 square feet in two buildings in Hayward, California. One of the buildings is utilized for administrative operations, research and development, genomics services production and instrument production. The remaining space may be developed and occupied in phases, depending on growth. The Hayward lease runs through December 2008. We have an option to extend the lease for an additional five-year period, subject to certain conditions. We also lease approximately 23,000 square feet in Little Chesterford, United Kingdom, which is occupied by Solexa Limited, our wholly-owned subsidiary. The Chesterford lease expires in July 2008.

25

Table of Contents

On February 14, 2007, we entered into a lease agreement with BioMed Realty Trust, Inc. (BioMed) to expand into a new office building BioMed will build in San Diego, California. The new building will be used for research and development, manufacturing and administrative purposes. The lease covers approximately 84,000 square feet, which is to be occupied in three phases, the first of which is expected to be occupied by October 1, 2008. The lease expires 15 years from the date the first phase is occupied, subject to our right to extend the term for up to three additional five-year periods.

Item 3. ***Legal Proceedings.***

We have incurred substantial costs in defending ourselves against patent infringement claims, and expect to devote substantial financial and managerial resources to protect our intellectual property and to defend against the claims described below as well as any future claims asserted against us.

Affymetrix Litigation

On July 26, 2004, Affymetrix, Inc. (Affymetrix) filed a complaint in the U.S. District Court for the District of Delaware alleging that the use, manufacture and sale of our BeadArray products and services, including our Array Matrix and BeadChip products, infringe six Affymetrix patents. Affymetrix seeks an injunction against the sale of products, if any, that are determined to infringe these patents, unspecified monetary damages, interest and attorneys fees. On September 15, 2004, we filed our answer to Affymetrix complaint, seeking declaratory judgments from the court that we do not infringe the Affymetrix patents and that such patents are invalid. We also filed counterclaims against Affymetrix for unfair competition and interference with actual and prospective economic advantage.

On February 15, 2006, the court allowed us to file our first amended answer and counterclaims, adding allegations of inequitable conduct with respect to all six asserted Affymetrix patents, violation of Section 2 of the Sherman Act, and unclean hands. In March 2006, Affymetrix notified us of its decision to drop one of the six patents from the suit and of its intention to assert infringement of certain additional claims of the remaining five patents. We have filed a motion to preclude Affymetrix from asserting infringement of those additional claims. That motion is still pending at this time. On June 30, 2006, the court dismissed the patent Affymetrix had sought to withdraw from the suit. Both parties filed summary judgment motions by the July 14, 2006 deadline established by the court. On August 16, 2006, the court issued a ruling on the claim construction hearing that it had held on April 20, 2006. We believe the court s opinion construed several key claim terms in our favor, and did not adversely impact our defenses and pending counterclaims in any material respect. Trial has been rescheduled to March 5, 2007 from October 16, 2006 at the request of both parties. A pre-trial conference was held on February 8, 2007 during which the court established a multi-phase trial structure with the first phase of the trial to begin on March 5, 2007, and addressed related issues. We believe we have meritorious defenses against each of the infringement claims alleged by Affymetrix, and intend to defend vigorously against this suit. However, we cannot be sure that we will prevail in this matter. Any unfavorable determination, and in particular, any significant cash amounts required to be paid by us or prohibition of the sale of our products and services, could result in a material adverse effect on our business, financial condition and results of operations.

Table of Contents

Dr. Anthony W. Czarnik v. Illumina, Inc.

On June 15, 2005, Dr. Anthony Czarnik, a former employee, filed suit against us in the U.S. District Court for the District of Delaware seeking correction of inventorship of certain of our patents and patent applications and alleging that we committed inequitable conduct and fraud in not naming him as an inventor. Dr. Czarnik seeks an order requiring us and the U.S. Patent and Trademark Office to correct the inventorship of certain of our patents and patent applications by adding Dr. Czarnik as an inventor, a judgment declaring certain of our patents and patent applications unenforceable, unspecified monetary damages and attorney s fees. On August 4, 2005, we filed a motion to dismiss the complaint for lack of standing and failure to state a claim. While this motion was pending, Dr. Czarnik filed an amended complaint on September 23, 2005. On October 7, 2005, we filed a motion to dismiss the amended complaint for lack of standing and failure to state a claim. On July 13, 2006, the court granted our motion to dismiss the counts of Dr. Czarnik s complaint dealing with correction of inventorship in pending applications and inequitable conduct. On July 27, 2006, we filed an answer to the two remaining counts of the amended complaint (correction of inventorship in issued patents and fraud). There has been no trial date set for this case. We believe we have meritorious defenses against these claims.

Applied Biosystems Litigation

On December 26, 2006, the Applied Biosystems Group of Applera Corporation filed suit against Solexa, which we acquired in a stock-for-stock merger on January 26, 2007. Applied Biosystems action against Solexa, which was filed in California state court in Santa Clara County, seeks ownership of patents covering Sequencing-by-Ligation technologies. We filed our answer to the complaint by the required deadline. The patents at issue were assigned in 1995 to Solexa s predecessor company (Lynx Therapeutics) by a former employee, Dr. Stephen Macevicz, who is named as a co-defendant in the suit. Lynx, which was originally a unit of Applied Biosystems, was spun out of Applied Biosystems in 1992. The patents at issue in the suit relate to methods for sequencing DNA using successive rounds of oligonucleotide probe ligation (Sequencing-by-Ligation). Our new Illumina Genome Analyzer system uses a different technology, DNA Sequencing-by-Synthesis (SBS), which we believe is not covered by any of the patents at issue in the suit. We also believe the MPSS technology used by Lynx did not use the methods covered by these patents, and in any event our subsidiary no longer uses the MPSS technologies. We believe that the suit is not material to our current or future business, and we have no plans to use any of the Sequencing-by-Ligation technologies covered by the patents at issue in the suit. Applied Biosystems does not assert any claim for patent infringement in the suit.

Termination-of-Employment Lawsuit

In March 2001, a complaint seeking damages of an unspecified amount was filed against us by Dr. Czarnik in the Superior Court of the State of California in connection with the employee s termination of employment with Illumina. In June 2002, a California Superior Court judgment was rendered against us and we recorded a $7.7 million charge in our financial results for the second quarter of 2002 to cover total damages and remaining expenses. We appealed the decision, and in December 2004, the Fourth Appellate District Court of Appeal, in San Diego, California, reduced the amount of the award. We recorded interest expense on the $7.7 million during the appeal based on the statutory rate. As a result of the revised judgment, we reduced the $9.2 million liability on our balance sheet to $5.9 million and recorded a gain of $3.3 million as a litigation judgment in the fourth quarter of 2004. In January 2005, we paid the $5.9 million and removed the liability from our balance sheet.

Item 4. ***Submission of Matters to a Vote of Security Holders.***

No matters were submitted to a vote of security holders during the fourth quarter of 2006.

27

Table of Contents

PART II

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

Our common stock has been quoted on the NASDAQ Global Market under the symbol ILMN since July 28, 2000. Prior to that time, there was no public market for our common stock. The following table sets forth, for the periods indicated, the quarterly high and low sales prices per share of our common stock as reported on the NASDAQ Global Market. Our present policy is to retain earnings, if any, to finance future growth. We have never paid cash dividends and have no present intention to pay cash dividends in the foreseeable future. In addition, the indenture for our convertible senior notes due 2014, which are convertible into cash and, in certain circumstances, shares of our common stock, requires us to increase the conversion rate applicable to the notes if we pay any cash dividends.

	2006	
	High	**Low**
First Quarter	$ 27.98	$ 16.10
Second Quarter	32.00	21.60
Third Quarter	40.00	27.02
Fourth Quarter	45.87	32.20

	2005	
	High	**Low**
First Quarter	$ 11.35	$ 6.72
Second Quarter	12.95	7.90
Third Quarter	14.83	10.82
Fourth Quarter	16.80	12.76

At February 1, 2007, there were approximately 1,500 stockholders of record, and the closing price per share of our common stock, as reported on the NASDAQ Global Market on such date, was $41.56.

Sales of Unregistered Securities

None during fiscal 2006.

Issuer Purchases of Equity Securities

None during fiscal 2006.

Use of Proceeds

We completed our initial public offering of common stock in July 2000, resulting in net proceeds of $101.3 million. Through December 31, 2006, we used approximately $46.0 million to purchase property, plant and equipment, approximately $2.4 million for the acquisition of CyVera, and approximately $52.9 million to fund general operating

expenses.

Table of Contents

Item 6. ***Selected Financial Data.***

The following selected historical consolidated financial data has been derived from our audited consolidated financial statements. The balance sheet data as of December 31, 2006 and January 1, 2006 and statement of operations data for each of the three years in the period ended December 31, 2006 are derived from audited consolidated financial statements included in this Annual Report on Form 10-K. The balance sheet data as of January 2, 2005, December 28, 2003, and December 29, 2002 and statement of operations data for each of the two years in the period ended December 28, 2003 are derived from our audited consolidated financial statements that are not included in this Annual Report on Form 10-K. The Company s fiscal year is 52 or 53 weeks ending the Sunday closest to December 31, with quarters of 13 or 14 weeks ending the Sunday closest to March 31, June 30, and September 30. The years ended December 31, 2006 and January 1, 2006 were both 52 weeks. The year ended January 2, 2005 was 53 weeks. You should read this table in conjunction with Item 7, Management s Discussion and Analysis of Financial Condition and Results of Operations, and Item 8, Financial Statements and Supplementary Data.

Statement of Operations Data

	Year Ended December 31, 2006	Year Ended January 1, 2006	Year Ended January 2, 2005	Year Ended December 28, 2003	Year Ended December 29, 2002
	(In thousands, except per share data)				
Revenue:					
Product revenue	$ 155,811	$ 57,752	$ 40,497	$ 18,378	$ 4,103
Service and other revenue	27,486	13,935	8,075	6,496	3,305
Research revenue	1,289	1,814	2,011	3,161	2,632
Total revenue	184,586	73,501	50,583	28,035	10,040
Costs and expenses:					
Cost of product revenue (including non-cash stock compensation expense of $1,289, $0, $0, $0 and $0, respectively)	51,271	19,920	11,572	7,437	1,815
Cost of service and other revenue (including non-cash stock compensation expense of $235, $0, $0, $0 and $0, respectively)	8,073	3,261	1,687	2,600	1,721
Research and development (including non-cash stock compensation expense of $3,891, $84, $348, $1,289 and $2,399, respectively)	33,373	27,809	21,462	23,800	29,247
Selling, general and administrative (including non-cash stock compensation expense of $8,889, $186, $496, $1,165 and $1,961,	54,057	28,158	25,576	20,064	11,060

respectively)					
Acquired in-process research and development		15,800			
Litigation judgment (settlement), net			(4,201)	756	8,052
Total costs and expenses	146,774	94,948	56,096	54,657	51,895
Income (loss) from operations	37,812	(21,447)	(5,513)	(26,622)	(41,855)
Interest income	5,368	1,404	941	1,821	3,805
Interest and other expense, net	(560)	(668)	(1,518)	(2,262)	(2,281)
Income (loss) before income taxes	42,620	(20,711)	(6,090)	(27,063)	(40,331)
Provision for income taxes	2,652	163	135		
Net income (loss)	$ 39,968	$ (20,874)	$ (6,225)	$ (27,063)	$ (40,331)
Net income (loss) per basic share	$ 0.90	$ (0.52)	$ (0.17)	$ (0.85)	$ (1.31)
Net income (loss) per diluted share	$ 0.82	$ (0.52)	$ (0.17)	$ (0.85)	$ (1.31)
Shares used in calculating basic net income (loss) per share	44,501	40,147	35,845	31,925	30,890
Shares used in calculating diluted net income (loss) per share	48,754	40,147	35,845	31,925	30,890

Table of Contents

See Note 1 to the consolidated financial statements for an explanation of the determination of the number of shares used to compute basic and diluted net income (loss) per share.

Balance Sheet Data

	December 31, 2006	January 1, 2006	January 2, 2005	December 28, 2003	December 29, 2002
			(In thousands)		
Cash, cash equivalents and short-term investments	$ 130,804	$ 50,822	$ 66,994	$ 33,882	$ 66,294
Working capital	159,950	57,992	64,643	32,229	58,522
Total assets	300,584	100,610	94,907	99,234	121,906
Long-term debt, less current portion		54		24,999	25,620
Accumulated deficit	(104,618)	(144,586)	(123,712)	(117,487)	(90,424)
Total stockholders equity	247,342	72,497	72,262	47,388	71,744

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

The following discussion and analysis should be read with Item 6. Selected Financial Data and our consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. The discussion and analysis in this Annual Report on Form 10-K contains forward-looking statements that involve risks and uncertainties, such as statements of our plans, objectives, expectations and intentions. Words such as anticipate, believe, continue, estimate, expect, intend, may, plan, potential, predict, project or similar words or phrases, or the negativ words, may identify forward-looking statements, but the absence of these words does not necessarily mean that a statement is not forward looking. Examples of forward-looking statements include, among others, statements regarding the integration of Solexa s and CyVera s technology with our existing technology, the commercial launch of new products, including products based on Solexa s and CyVera s technology, and the duration which our existing cash and other resources is expected to fund our operating activities.

Forward-looking statements are subject to known and unknown risks and uncertainties and are based on potentially inaccurate assumptions that could cause actual results to differ materially from those expected or implied by the forward looking statements. Factors that could cause or contribute to these differences include those discussed in Item 1A. Risk Factors as well as those discussed elsewhere. The risk factors and other cautionary statements made in this Annual Report on Form 10-K should be read as applying to all related forward-looking statements wherever they appear in this Annual Report on Form 10-K.

Overview

We are a leading developer, manufacturer and marketer of next-generation life science tools and integrated systems for the large scale analysis of genetic variation and biological function. Using our proprietary technologies, we provide a comprehensive line of products and services that currently serve the sequencing, genotyping and gene expression markets, and we expect to enter the market for molecular diagnostics. Our customers include leading genomic research centers, pharmaceutical companies, academic institutions, clinical research organizations and biotechnology companies. Our tools provide researchers around the world with the performance, throughput, cost effectiveness and flexibility necessary to perform the billions of genetic tests needed to extract valuable medical information from advances in genomics and proteomics. We believe this information will enable researchers to

correlate genetic variation and biological function, which will enhance drug discovery and clinical research, allow diseases to be detected earlier and permit better choices of drugs for individual patients.

Table of Contents

On January 26, 2007, we completed the acquisition of Solexa for approximately 13.1 million shares of our common stock. Solexa develops and commercializes genetic analysis technologies used to perform a range of analyses including whole genome resequencing, gene expressing analysis and small RNA analysis. We believe our combined company is the only company with genome-scale technology for genotyping, gene expression and sequencing, the three cornerstones of modern genetic analysis.

Our revenue is subject to fluctuations due to the timing of sales of high-value products and service projects, the impact of seasonal spending patterns, the timing and size of research projects our customers perform, changes in overall spending levels in the life science industry and other unpredictable factors that may affect our customer ordering patterns. Any significant delays in the commercial launch or any lack or delay of commercial acceptance of new products, unfavorable sales trends in our existing product lines, or impacts from the other factors mentioned above, could adversely affect our revenue growth or cause a sequential decline in quarterly revenue. Due to the possibility of fluctuations in our revenue and net income or loss, we believe quarterly comparisons of our operating results are not a good indication of our future performance.

Prior to 2006, we incurred substantial operating losses. As of December 31, 2006, our accumulated deficit was $104.6 million and total stockholders equity was $247.3 million. Losses prior to 2006 have principally occurred as a result of the substantial resources required for the research, development and manufacturing scale-up effort required to commercialize our products and services, an acquired in-process research and development charge of $15.8 million related to our acquisition of CyVera in 2005 and a charge of $5.9 million in 2004 related to a termination-of-employment lawsuit. We expect to continue to incur substantial costs for research, development and manufacturing scale-up activities over the next several years. We will also need to increase our selling, general and administrative costs as we build up our sales and marketing infrastructure to expand and support the sale of systems, other products and services.

Critical Accounting Policies and Estimates

General

Our discussion and analysis of our financial condition and results of operations is based upon our consolidated financial statements, which have been prepared in accordance with U.S. generally accepted accounting principles. The preparation of financial statements requires that management make estimates, assumptions and judgments with respect to the application of accounting policies that affect the reported amounts of assets, liabilities, revenue and expenses, and the disclosures of contingent assets and liabilities. Actual results could differ from those estimates.

Our significant accounting policies are described in Note 1 to our consolidated financial statements. Certain accounting policies are deemed critical if 1) they require an accounting estimate to be made based on assumptions that were highly uncertain at the time the estimate was made, and 2) changes in the estimate that are reasonably likely to occur, or different estimates that we reasonably could have used would have a material effect on our consolidated financial statements.

Management has discussed the development and selection of these critical accounting policies with the Audit Committee of our Board of Directors, and the Audit Committee has reviewed the disclosure. In addition, there are other items within our financial statements that require estimation, but are not deemed critical as defined above.

We believe the following critical accounting policies reflect our more significant estimates and assumptions used in the preparation of the consolidated financial statements.

31

Table of Contents

Revenue Recognition

Our revenue is generated primarily from the sale of products and services. Product revenue consists of sales of arrays, reagents, instrumentation and oligos. Service and other revenue consists of revenue received for performing genotyping services, extended warranty sales and revenue earned from milestone payments.

We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the seller s price to the customer is fixed or determinable and collectibility is reasonably assured. In instances where final acceptance of the product or system is required, revenue is deferred until all the acceptance criteria have been met. All revenue is recorded net of any applicable allowances for returns or discounts.

Revenue for product sales is recognized generally upon shipment and transfer of title to the customer, provided no significant obligations remain and collection of the receivables is reasonably assured. Revenue from the sale of instrumentation is recognized when earned, which is generally upon shipment. However, in the case of BeadLabs, revenue is recognized upon the completion of installation, training and customer acceptance. Revenue for genotyping services is recognized when earned, which is generally at the time the genotyping analysis data is delivered to the customer or as specific milestones are achieved.

In order to assess whether the price is fixed and determinable, we ensure there are no refund rights. If payment terms are based on future performance or a right of return exists, we defer revenue recognition until the price becomes fixed and determinable. We assess collectibility based on a number of factors, including past transaction history with the customer and the creditworthiness of the customer. If we determine that collection of a payment is not reasonably assured, revenue recognition is deferred until the time collection becomes reasonably assured, which is generally upon receipt of payment.

Sales of instrumentation generally include a standard one-year warranty. We also sell separately priced maintenance (extended warranty) contracts, which are generally for one or two years, upon the expiration of the initial warranty. Revenue for extended warranty sales is recognized ratably over the term of the extended warranty period. Reserves are provided for estimated product warranty expenses at the time the associated revenue is recognized. If we were to experience an increase in warranty claims or if costs of servicing our warrantied products were greater than our estimates, gross margins could be adversely affected.

While the majority of our sales agreements contain standard terms and conditions, we do enter into agreements that contain multiple elements or non-standard terms and conditions. Emerging Issues Task Force (EITF) No. 00-21, *Revenue Arrangements with Multiple Deliverables,* provides guidance on accounting for arrangements that involve the delivery or performance of multiple products, services, or rights to use assets within contractually binding arrangements. Significant contract interpretation is sometimes required to determine the appropriate accounting, including whether the deliverables specified in a multiple element arrangement should be treated as separate units of accounting for revenue recognition purposes, and if so, how the price should be allocated among the deliverable elements, when to recognize revenue for each element, and the period over which revenue should be recognized. We recognize revenue for delivered elements only when we determine that the fair values of undelivered elements are known and there are no uncertainties regarding customer acceptance.

Table of Contents

Some of our agreements contain multiple elements that include milestone payments. Revenue from a milestone achievement is recognized when earned, as evidenced by acknowledgement from our collaborator, provided that (i) the milestone event is substantive and its achievability was not reasonably assured at the inception of the agreement, (ii) the milestone represents the culmination of an earnings process, (iii) the milestone payment is non-refundable and (iv) the performance obligations for both us and our collaborators after the milestone achievement will continue at a level comparable to the level before the milestone achievement. If all of these criteria are not met, the milestone achievement is recognized over the remaining minimum period of our performance obligations under the agreement. We defer non-refundable upfront fees received under our collaborations and recognize them over the period the related services are provided or over the estimated collaboration term using various factors specific to the collaboration. Advance payments received in excess of amounts earned are classified as deferred revenue until earned.

Research revenue consists of amounts earned under research agreements with government grants, which is recognized in the period during which the related costs are incurred.

Allowance for Doubtful Accounts

We maintain an allowance for doubtful accounts for estimated losses resulting from the inability of our customers to make required payments. We evaluate the collectibility of our accounts receivable based on a combination of factors. We regularly analyze customer accounts, review the length of time receivables are outstanding and review historical loss rates. If the financial condition of our customers were to deteriorate, additional allowances could be required.

Inventory Valuation

We record adjustments to inventory for potentially excess, obsolete or impaired goods in order to state inventory at net realizable value. We must make assumptions about future demand, market conditions and the release of new products that will supercede old ones. We regularly review inventory for excess and obsolete products and components, taking into account product life cycle and development plans, product expiration and quality issues, historical experience and our current inventory levels. If actual market conditions are less favorable than anticipated, additional inventory adjustments could be required.

Contingencies

We are subject to legal proceedings primarily related to intellectual property matters. Based on the information available at the balance sheet dates and through consultation with our legal counsel, we assess the likelihood of any adverse judgments or outcomes of these matters, as well as the potential ranges of probable losses. If losses are probable and reasonably estimable, we will record a liability in accordance with Statement of Financial Accounting Standards (SFAS) No. 5, *Accounting for Contingencies.* Currently, we have no such liabilities recorded. This may change in the future depending upon new developments.

Income Taxes

In accordance with SFAS No. 109, *Accounting for Income Taxes*, the provision for income taxes is computed using the asset and liability method, under which deferred tax assets and liabilities are recognized for the expected future tax consequences of temporary differences between the financial reporting and tax bases of assets and liabilities, and for the expected future tax benefit to be derived from tax loss and credit carryforwards. Deferred tax assets and liabilities are determined using the enacted tax rates in effect for the years in which those tax assets are expected to be realized. A valuation allowance is established when it is more likely than not the future realization of all or some of the deferred tax assets will not be achieved. The evaluation of the need for a valuation allowance is performed on a

jurisdiction by jurisdiction basis, and includes a review of all available positive and negative evidence.

Table of Contents

Due to the adoption of SFAS No. 123 (revised 2004), Share-Based Payment, we recognize excess tax benefits associated with share-based compensation to stockholders equity only when realized. When assessing whether excess tax benefits relating to share-based compensation have been realized, we follow the with-and-without approach excluding any indirect effects of the excess tax deductions. Under this approach, excess tax benefits related to share-based compensation are not deemed to be realized until after the utilization of all other tax benefits available to us.

Goodwill and Intangible Asset Valuation

The purchase method of accounting for acquisitions requires extensive use of accounting estimates and judgments to allocate the purchase price to the fair value of the net tangible and intangible assets acquired, including in-process research and development (IPR&D). Goodwill and intangible assets deemed to have indefinite lives are not amortized, but are subject to at least annual impairment tests. The amounts and useful lives assigned to other acquired intangible assets impact future amortization, and the amount assigned to IPR&D is expensed immediately. Determining the fair values and useful lives of intangible assets especially requires the exercise of judgment. While there are a number of different acceptable generally accepted valuation methods to estimate the value of intangible assets acquired, we primarily use the discounted cash flow method. This method requires significant management judgment to forecast the future operating results used in the analysis. In addition, other significant estimates are required such as residual growth rates and discount factors. The estimates we use to value and amortize intangible assets are consistent with the plans and estimates that we use to manage our business and are based on available historical information and industry estimates and averages. These judgments can significantly affect our net operating results.

SFAS No. 142, *Goodwill and Other Intangible Assets.* SFAS No. 142 requires that goodwill and certain intangible assets be assessed for impairment using fair value measurement techniques. If the carrying amount of a reporting unit exceeds its fair value, then a goodwill impairment test is performed to measure the amount of the impairment loss, if any. The goodwill impairment test compares the implied fair value of the reporting unit s goodwill with the carrying amount of that goodwill. The implied fair value of goodwill is determined in the same manner as in a business combination. Determining the fair value of the implied goodwill is judgmental in nature and often involves the use of significant estimates and assumptions. These estimates and assumptions could have a significant impact on whether or not an impairment charge is recognized and also the magnitude of any such charge. Estimates of fair value are primarily determined using discounted cash flows and market comparisons. These approaches use significant estimates and assumptions, including projection and timing of future cash flows, discount rates reflecting the risk inherent in future cash flows, perpetual growth rates, determination of appropriate market comparables, and determination of whether a premium or discount should be applied to comparables. It is reasonably possible that the plans and estimates used to value these assets may be incorrect. If our actual results, or the plans and estimates used in future impairment analyses, are lower than the original estimates used to assess the recoverability of these assets, we could incur additional impairment charges. As of December 31, 2006, we had $2.1 million of goodwill. This goodwill is reported as a separate line item in the balance sheet. We have performed our annual test of goodwill as of May 1, 2006 and have determined there has been no impairment of goodwill as of December 31, 2006.

Stock-Based Compensation

We account for stock-based compensation in accordance with SFAS No. 123R, *Share-Based Payment.* Under the provisions of SFAS No. 123R, stock-based compensation cost is estimated at the grant date based on the award s fair-value as calculated by the Black-Scholes-Merton (BSM) option-pricing model and is recognized as expense over the requisite service period. The BSM model requires various highly judgmental assumptions including volatility, forfeiture rates, and expected option life. If any of these assumptions used in the BSM model change significantly, stock-based compensation expense may differ materially in the future from that recorded in the current period.

34

Table of Contents

Results of Operations

To enhance comparability, the following table sets forth audited consolidated statement of operations data for the years ended December 31, 2006, January 1, 2006, and January 2, 2005 stated as a percentage of total revenue.

	Year Ended December 31, 2006	Year Ended January 1, 2006	Year Ended January 2 2005
Revenue			
Product revenue	84%	79%	80%
Service and other revenue	15	19	16
Research revenue	1	2	4
Total revenue	100	100	100
Costs and expenses:			
Cost of product revenue	28	27	23
Cost of service and other revenue	5	4	3
Research and development	18	38	42
Selling, general and administrative	29	38	51
Acquired in-process research and development		22	
Litigation judgment (settlement), net			(8)
Total costs and expenses	80	129	111
Income (loss) from operations	20	(29)	(11)
Interest income	3	2	2
Interest and other expense, net		(1)	(3)
Income (loss) before income taxes	23	(28)	(12)
Provision for income taxes	1		
Net income (loss)	22%	(28%)	(12%)

Comparison of Years Ended December 31, 2006 and January 1, 2006

Our fiscal year is 52 or 53 weeks ending the Sunday closest to December 31, with quarters of 13 or 14 weeks ending the Sunday closest to March 31, June 30, and September 30. The years ended December 31, 2006 and January 1, 2006 were both 52 weeks.

Revenue

	Year Ended	Year Ended

	December 31, 2006	January 1, 2006	Percentage Change
	(In thousands)		
Product revenue	$ 155,811	$ 57,752	170%
Service and other revenue	27,486	13,935	97
Research revenue	1,289	1,814	(29)
Total revenue	$ 184,586	$ 73,501	151%

Total revenue for the years ended December 31, 2006 and January 1, 2006 was $184.6 million and $73.5 million, respectively. This represents an increase of $111.1 million for 2006, or 151%, compared to 2005.

Table of Contents

Product revenue increased to $155.8 million for the year ended December 31, 2006 from $57.8 million for the year ended January 1, 2006. The increase in 2006 resulted primarily from higher consumable and BeadStation sales. Growth in consumable revenue was primarily attributable to the launch and shipment of our whole genome genotyping products, the HumanHap300 and HumanHap550 BeadChips. In addition, growth in consumable revenue can be attributed to the growth in our installed base of BeadArray Readers, which has nearly doubled since January 1, 2006. Consumable products constituted 66% of product revenue for year ended December 31, 2006, compared to 47% in the year ended January 1, 2006. We expect to see continued growth in product revenue, which can be partially attributed to the launch of several new products, as well as the growth of our installed base of instruments.

Service and other revenue increased to $27.5 million for the year ended December 31, 2006 from $13.9 million for the year ended January 1, 2006. The increase in service and other revenue is primarily due to the completion of several significant Infinium and GoldenGate SNP genotyping service contracts. We introduced our Infinium services in early 2006. We expect sales from SNP genotyping services contracts to fluctuate on a yearly and quarterly basis, depending on the mix and number of contracts that are completed. The timing of completion of a SNP genotyping services contract is highly dependent on the customer s schedule for delivering the SNPs and samples to us.

Government grants and other research funding decreased to $1.3 million for the year ended December 31, 2006 from $1.8 million for the year ended January 1, 2006, due primarily to the completion of several projects funded by grants from the National Institutes of Health. We do not expect research revenue to be a material component of our revenue going forward.

Cost of Product and Service and Other Revenue

	Year Ended December 31, 2006	Year Ended January 1, 2006	Percentage Change
	(In thousands)		
Cost of product revenue	$ 51,271	$ 19,920	157%
Cost of service and other revenue	8,073	3,261	148
Total cost of product and service and other revenue	$ 59,344	$ 23,181	156%

Cost of product and service and other revenue represents manufacturing costs incurred in the production process, including component materials, assembly labor and overhead, installation, warranty, packaging and delivery costs, as well as costs associated with performing genotyping services on behalf of our customers. Costs related to research revenue are included in research and development expense. Cost of product revenue increased to $51.3 million for the year ended December 31, 2006, compared to $19.9 million for the year ended January 1, 2006, primarily driven by higher consumable and instrument sales. Cost of product revenue for the year ended December 31, 2006 included stock-based compensation expenses resulting from the adoption of SFAS No. 123R totaling $1.3 million. Gross margin on product revenue increased to 67.1% for the year ended December 31, 2006, compared to 65.5% for the year ended January 1, 2006. The increase in gross margin percentage is primarily due to the impact of favorable product mix, as well as decreased manufacturing costs. A higher percentage of our revenue in 2006 was generated from the sale of consumables, which generally have a more favorable gross margin than other products. The decrease in manufacturing costs is primarily due to reduced raw material costs as a result of more favorable negotiated contracts with our vendors and improvements in our manufacturing processes. This increase in gross margin was offset, in part,

by the impact of stock-based compensation charges, which decreased our gross margin by 83 basis points in 2006 compared to 2005.

Cost of service and other revenue increased to $8.1 million for the year ended December 31, 2006, compared to $3.3 million for the year ended January 1, 2006, primarily due to higher service revenue. Cost of service and other revenue for the year ended December 31, 2006 included stock-based

Table of Contents

compensation expenses resulting from the adoption of SFAS No. 123R totaling $0.2 million. Gross margin on service and other revenue decreased to 70.6% for the year ended December 31, 2006, compared to 76.6% for the year ended January 1, 2006. The decrease is due primarily to a change in the mix of projects, as well as the impact of stock-based compensation charges, the latter having decreased our service and other revenue gross margin by 85 basis points in 2006 compared to 2005.

We expect product mix to continue to affect our future gross margins. However, we expect our market to become increasingly price competitive and our margins may fluctuate from year to year and quarter to quarter.

Research and Development Expenses

	Year Ended December 31, 2006	Year Ended January 1, 2006	Percentage Change
	(In thousands)		
Research and development	$ 33,373	$ 27,809	20%

Our research and development expenses consist primarily of salaries and other personnel-related expenses, laboratory supplies and other expenses related to the design, development, testing and enhancement of our products. We expense our research and development expenses as they are incurred.

Research and development expenses increased to $33.4 million for the year ended December 31, 2006, compared to $27.8 million for the year ended January 1, 2006. Research and development expenses for the years ended December 31, 2006 and January 1, 2006 included stock-based compensation expenses primarily resulting from the adoption of SFAS No. 123R totaling $3.9 million and $0.1 million, respectively. Exclusive of these stock-based compensation charges, the increase in research and development expenses for the year ended December 31, 2006 is primarily due to the development of our recently-acquired VeraCode technology purchased in conjunction with our acquisition of CyVera in April 2005. The Company plans to launch its first products resulting from this acquisition during the first quarter of 2007. Research and development expenses related to the VeraCode technology increased $2.7 million for the year ended December 31, 2006, compared to the year ended January 1, 2006. In addition, costs to support our Oligator technology platform and BeadArray research activities decreased $1.0 million for the year ended December 31, 2006, compared to the year ended January 1, 2006.

We believe a substantial investment in research and development is essential to remaining competitive and expanding into additional markets. Accordingly, we expect our research and development expenses to increase in absolute dollars as we expand our product base and integrate the operations of Solexa into our business.

Selling, General and Administrative Expenses

	Year Ended December 31, 2006	Year Ended January 1, 2006	Percentage Change
	(In thousands)		
Selling, general and administrative	$ 54,057	$ 28,158	92%

Our selling, general and administrative expenses consist primarily of personnel costs for sales and marketing, finance, human resources, business development, legal and general management, as well as professional fees, such as expenses for legal and accounting services. Selling, general and administrative expenses increased to $54.1 million for the year ended December 31, 2006, compared to $28.2 million for the year ended January 1, 2006. Selling, general and administrative expenses for the years ended December 31, 2006 and January 1, 2006 included stock-based compensation expenses primarily resulting from the adoption of SFAS No. 123R totaling $8.9 million and $0.2 million, respectively.

Sales and marketing expenses increased $10.6 million during the year ended December 31, 2006, compared to the year ended January 1, 2006. The increase is primarily due to increases of $6.5 million attributable to personnel-related expenses, $3.2 million of stock-based compensation expense and

Table of Contents

$0.9 million attributable to other non-personnel-related costs, mainly sales and marketing activities for our existing and new products. General and administrative expenses increased $15.3 million during the year ended December 31, 2006, compared to the year ended January 1, 2006, due to increases of $5.5 million of stock-based compensation expense, $5.3 million in outside legal costs related to the Affymetrix litigation, $3.1 million in personnel-related expenses associated with the growth of our business and $1.4 million in outside consulting costs. Outside consulting costs primarily include tax and audit fees and general legal expenses not associated with the Affymetrix litigation.

We expect our selling, general and administrative expenses to increase in absolute dollars as we expand our staff, add sales and marketing infrastructure, incur increased litigation costs and incur additional costs to support the growth in our business.

Interest Income

	Year Ended December 31, 2006	Year Ended January 1, 2006	Percentage Change
	(In thousands)		
Interest income	$ 5,368	$ 1,404	282%

Interest income on our cash and cash equivalents and investments was $5.4 million and $1.4 million for the years ended December 31, 2006 and January 1, 2006, respectively. The increase was due to higher average cash balances and higher effective interest rates compared to the prior year.

Interest and Other Expense, Net

	Year Ended December 31,	Year Ended January 1,	Percentage